



Fairfax County
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SUSTAINABILITY INITIATIVES

FY 2022





FAIRFAX COUNTY BOARD OF SUPERVISORS

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TABLE OF CONTENTS

Preface	9
Introduction	11
Section 1: Fairfax County Government: An Overview	13
1.1 Introduction.....	15
1.2 Fairfax County Government.....	16
1.2.1 County Governance	16
1.2.2 Cities and Towns	19
1.2.3 Boards, Authorities and Commissions	19
1.2.4 Other Authorities and Commissions.....	22
1.3 Energy and Environment Agencies and Business Areas.....	22
1.3.1 Office of Environmental and Energy Coordination.....	22
1.3.2 Department of Public Works and Environmental Services	24
1.3.3 Other County Departments	25
1.4 Regional and Partner Collaboration	26
1.4.1 Regional Collaboration	26
1.4.2 Partner Organizations.....	27
Section 2: Regulatory, Policy and Strategic Framework.....	29
2.1 Introduction.....	31
2.2 Policies Adopted by the Board of Supervisors	31
2.2.1 Priorities and Goals	31
2.2.2 Environmental Vision	33
2.2.3 Cool Counties and Carbon Neutral Counties Declarations.....	34
2.2.4 Operational Energy Strategy: 2018 and 2021	35
2.2.5 Comprehensive Plan	36
2.2.6 Tree Action Plan	38
2.2.7 Solid Waste Management Plan	39
2.2.8 Sustainable Development Policy for Capital Projects.....	39
2.2.9 Fairfax County Park Authority Policy	41
2.3 Ordinances Adopted by the Board of Supervisors.....	42
2.4 Funding Mechanisms	43
Section 3: Promoting a Sustainable Community	45
3.1 Introduction.....	47
3.2 Growth and Land Use	47
3.2.1 Zoning and Planning	48
3.2.2 Transit-Oriented Mixed-Use Development	49
3.2.3 Revitalization	50
3.2.4 Green Buildings.....	51
3.2.4.A Green Building Policy.....	51
3.2.4.B Green Building Priority Plan Review	53
3.2.4.C County Incentives for Solar Installations.....	53
3.2.5 Noise, Light Pollution and Visual Pollution.....	53
3.2.5.A Noise.....	53
3.2.5.B Light Pollution	54
3.2.5.C Visual Pollution	55

3.3	Air Quality and Transportation	55
3.3.1	Air Quality	56
3.3.1.A	Air Quality Planning in the Washington Metropolitan Region	56
3.3.1.B	Washington Metropolitan Air Quality Status	57
3.3.2	Transportation	57
3.3.2.A	Transportation Planning in the Washington Metropolitan Region	57
3.3.2.B	Fairfax County Multimodal Transportation Initiatives	58
3.4	Water	60
3.4.1	Stormwater	61
3.4.2	Wastewater	62
3.4.3	Water Supply Planning	63
3.5	Solid Waste Management	64
3.5.1	Recycling	64
3.5.2	SWMP Green Initiatives	65
3.6	Parks and Ecological Resources	67
3.6.1	Open Space in Fairfax County	67
3.6.2	Natural Resource Management	69
3.6.3	Policy and Regulatory Mechanisms for Protecting Natural Resources	70
3.6.3.A	Chesapeake Bay Preservation Ordinance	71
3.6.3.B	Stormwater Management Ordinance	71
3.6.3.C	Floodplain Regulation	72
3.6.3.D	Wetlands Zoning Ordinance	72
3.6.3.E	Comprehensive Plan Policy	74
3.6.4	Trees and Tree Conservation	74
3.6.4.A	Urban Forest Management	75
3.6.4.B	Tree Action Plan	76
3.7	Climate and Energy	76
3.7.1	Climate Change Planning and Action	77
3.7.1.A	Community-wide Energy and Climate Action Plan	77
3.7.1.B	Resilient Fairfax	79
3.7.2	Fairfax Green Initiatives	81
3.8	Environmental Stewardship and Outreach	81
3.8.1	Education and Outreach	81
3.8.1.A	Energy Action Fairfax and HomeWise	82
3.8.1.B	Fairfax County Park Authority	84
3.8.1.C	Department of Public Works and Environmental Services	84
3.8.2	Community Stewardship Opportunities	85
3.8.2.A	Watershed Volunteer Opportunities	85
3.8.2.B	Volunteer Opportunities in County Parks	86
3.8.2.C	Activities Offered by Northern Virginia Soil and Water Conservation District	86
3.8.2.D	Additional Service Opportunities	87
3.9	Environmental Health	87

Section 4: Promoting Sustainable County Operations	91
4.1 Introduction.	93
4.2 Building Design and Construction.	93
4.2.1 Green Building Policy for County Facilities.	93
4.2.2 Sustainable Design Strategies for Capital Projects	95
4.2.3 Selected Capital Improvement Projects	96
4.3 Procurement and Material Management	98
4.3.1 Sustainable Procurement Program	98
4.3.2 Surplus Items.	100
4.4 Facilities and Site Management.	101
4.4.1 FMD Energy Management.	101
4.5 Information Technology	103
4.5.1 IT Energy Efficiency Initiatives	103
4.6 Waste Management.	104
4.6.1 Solid Waste Management Program Sustainable Operations	104
4.6.2 Solid Waste Management Program Pilot Initiatives.	107
4.7 Vehicle Services.	107
4.7.1 Hybrid and Electric Fleet	108
4.7.2 Other Vehicle Services Initiatives	108
4.8 Fairfax Employees for Environmental Excellence	110
Section 5: Environmental Improvement Program: Objectives and Funded Projects	111
5.1 Introduction.	113
5.2 Objectives	113
5.3 FY 2022 EIP Projects.	114
5.3.1 The EIP Project Selection Process	114
5.3.2 FY 2022 Funding and Projects.	115
5.4 EIP Delivered Projects History	119
Section 6: Awards and Recognitions.	123
6.1 Selected Environmental Awards and Recognitions	125
Appendix I: How to Report Environmental Concerns.	137
Appendix II: Acronyms	141



Fairfax County Sustainability Initiatives (FCSI) provides an overview of many of the projects and programs carried out by Fairfax County and its partners in support of the climate, energy and environmental targets, goals and policies adopted by the Board of Supervisors (board).

Specifically, FCSI is a summary of what Fairfax County is doing to promote sustainability and protect the environment, consolidated into a single go-to resource. Although FCSI is accessible to the general public, and formatted with clear text and engaging images, it is not a simple brochure intended for the casual reader. Rather, FCSI is geared toward those with a stronger, more specific interest in the county's environmental initiatives. It is a reference guide for county staff, residents and businesses, and a resource for members of environmental organizations or students conducting research.

FCSI would not have been possible without the tireless efforts of the many highly dedicated professionals who contributed to the development of this document. I would like to especially thank Susan Hafeli, Kate Daley, Nathalie Owen, Joe Gorney, Emily Burton and Ali Althen of Fairfax County.

It is our hope that the *Fairfax County Sustainability Initiatives* report will clearly demonstrate the Fairfax County Board of Supervisors' leadership and commitment to promoting equitable sustainability in the county.

I hope that you will take up the challenge and work with us to further develop the county's sustainability initiatives.

Kambiz Agazi, Ph.D., P.E.
Director, Office of Environmental and Energy Coordination
Fairfax County, Virginia





A healthy environment enhances our quality of life and preserves the vitality that makes Fairfax County a special place to live and work. As such, the county government has a responsibility to be an environmental steward through its operational practices and to establish and implement policies and programs that will foster broader environmental protection and conservation efforts throughout the community and in the greater region.

On June 20, 2017, the Fairfax County Board of Supervisors (board) adopted its updated Environmental Vision, entitled *Fairfax County Environmental Vision*. The Environmental Vision, as described in more detail in Section 2.2.2, affirms that, in Fairfax County, environmental stewardship and prudent management of natural resources are not merely “add-ons,” or afterthoughts, but rather are essential and fundamental responsibilities of local government that must be given fullest consideration at all times. The Environmental Vision, which was initially adopted in 2004 and revised in 2007 and 2017, is available at www.fairfaxcounty.gov/environment/environmental-vision. All actions described within this document support the 2017 update to the Environmental Vision.

On July 13, 2021, the board adopted both a Carbon Neutral Counties Declaration and an update to its 2018 Operational Energy Strategy, entitled *Fairfax County Operational Energy Strategy*. The Carbon Neutral Counties Declaration commits the county to achieve energy carbon neutrality in its operations by 2040. To support this commitment, the updated Operational Energy Strategy (OES), as described in more detail in Section 2.2.4, identifies goals, targets and actions across major focus areas such as building energy use and efficiency, renewables, green buildings, fleet electrification and waste management. The updated OES is intended to mitigate the county’s greenhouse gas emissions, reduce operational costs, promote an energy-conscious culture for county employees and agencies, and advance the climate and energy objectives included in the Environmental Vision. The Operational Energy Strategy is available at www.fairfaxcounty.gov/environment-energy-coordination/energy-strategy and the Carbon Neutral Counties Declaration is available at www.fairfaxcounty.gov/environment-energy-coordination/carbon-neutral-counties-declaration.

Achieving the goals and targets articulated in the board’s Environmental Vision and Operational Energy Strategy requires cooperation and coordination between county residents, agencies, and elected officials. For this purpose, the board established the Office of Environmental and Energy Coordination (OEEC), effective July 1, 2019. The OEEC is charged with the cross-organizational development and implementation of environmental and energy goals, policies, and programs, which it does by regularly engaging with the board, other county agencies, authorities, and the greater community.

Environmental stewardship is both a key responsibility and a critical legacy of any elected public body . . . It is the county’s overarching vision to attain a quality environment that provides for a high quality of life and is sustainable for future generations. These aspects of a quality environment are essential for everyone living and working in Fairfax County. No matter what income, age, gender, ethnicity, or address, everyone has a right to breathe clean air, to drink clean water, and to live and work in a quality environment.

*Board of Supervisors’
Environmental Vision (2017)*

This document provides an overview of many of the projects and programs carried out by Fairfax County and its partners in support of the board's environmental and energy priorities, goals, and policies. Specifically:

Section 1 describes the county government structure, particularly as it relates to sustainability initiatives.

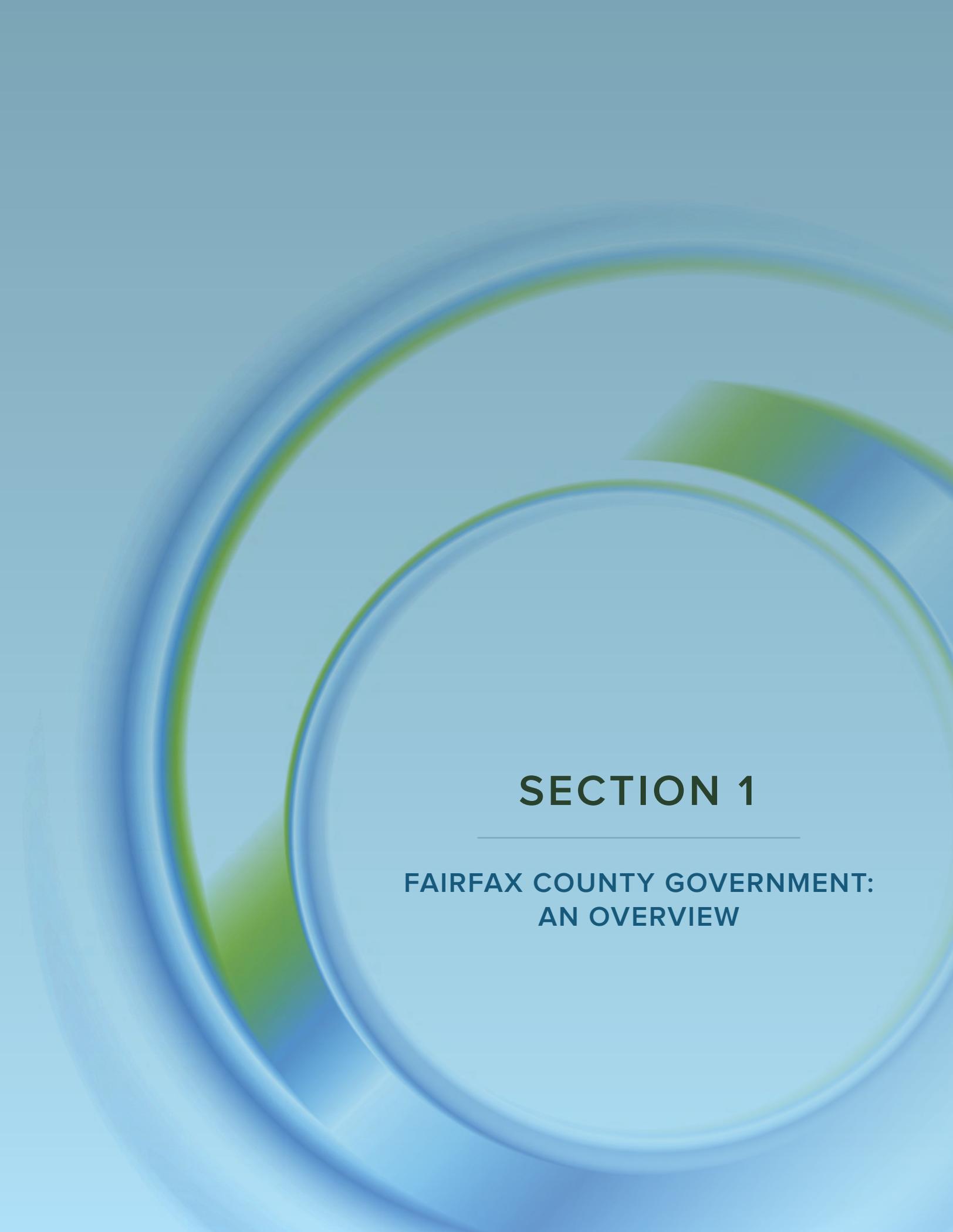
Section 2 summarizes the regulatory, policy and strategic framework that guides the sustainability efforts of the Fairfax County Board of Supervisors and county staff.

Section 3 describes sustainability activities with a community-wide impact.

Section 4 highlights several innovative and successful efforts to implement environmental and energy goals for county facilities and operations.

Section 5 identifies those projects and programs that receive funding set aside by the Board of Supervisors for the county's Environmental Improvement Program, which supports the board's Environmental Vision and Operational Energy Strategy.

Section 6 lists selected sustainability awards and recognitions received by the county over the last decade.



SECTION 1

FAIRFAX COUNTY GOVERNMENT: AN OVERVIEW

FAIRFAX COUNTY GOVERNMENT: AN OVERVIEW

Featured in this Section

1.1	Introduction	15
1.2	Fairfax County Government	16
1.2.1	County Governance	16
1.2.2	Cities and Towns	19
1.2.3	Boards, Authorities and Commissions	19
1.2.4	Other Authorities and Commissions	22
1.3	Energy and Environment Agencies and Business Areas	22
1.3.1	Office of Environmental and Energy Coordination	22
1.3.2	Department of Public Works and Environmental Services	24
1.3.3	Other County Departments	25
1.4	Regional and Partner Collaboration	26
1.4.1	Regional Collaboration	26
1.4.2	Partner Organizations	27

SECTION 1

1.1 Introduction

Fairfax County is a diverse and growing community. It is home to over 1.17 million residents, almost double its 1980 population. Nearly 40 percent of the county's residents speak a language other than English at home, and more than 60 percent are college graduates. The county has a total land area of 395 square miles; a fiscal year (FY) 2022 (July 1, 2021 through June 30, 2022) adopted budget of \$8.56 billion, including the General Fund and appropriated funds such as state and federal grants; and a 2019 median household income of \$128,374. More information about the county and its constituents is available in the Demographic Reports available at www.fairfaxcounty.gov/demographics/sites/demographics/files/assets/demographicreports/fullrpt.pdf.

The county is governed by the elected Fairfax County Board of Supervisors (board). The board engages residents and businesses, protects investment in the county's most critical priorities and maintains strong responsible fiscal stewardship to ensure:

- A quality educational system.
- Safe streets and neighborhoods.
- A clean, sustainable environment.
- Livable, caring and affordable communities.
- A vibrant economy.
- An efficient transportation network.
- Recreational and cultural opportunities.
- Affordable taxes.

To ensure the third priority – a clean, sustainable environment – the board has pledged to “continue to protect our drinking water, air quality, stream valleys and tree canopy through responsible environmental regulations and practices. We will continue to take a lead in initiatives to address energy efficiency and sustainability and to preserve and protect open space for our residents to enjoy.” See www.fairfaxcounty.gov/boardofsupervisors/priorities.

Advancing the board's priorities, consistent with the policies it has adopted over time as described in Section 2, requires the coordinated efforts of many actors working within the governance structure provided by state law. Section 1 describes the county's governance structure and briefly discusses the roles of key agencies and partners working to maintain a clean, sustainable Fairfax County.

1.2 Fairfax County Government

1.2.1 County Governance

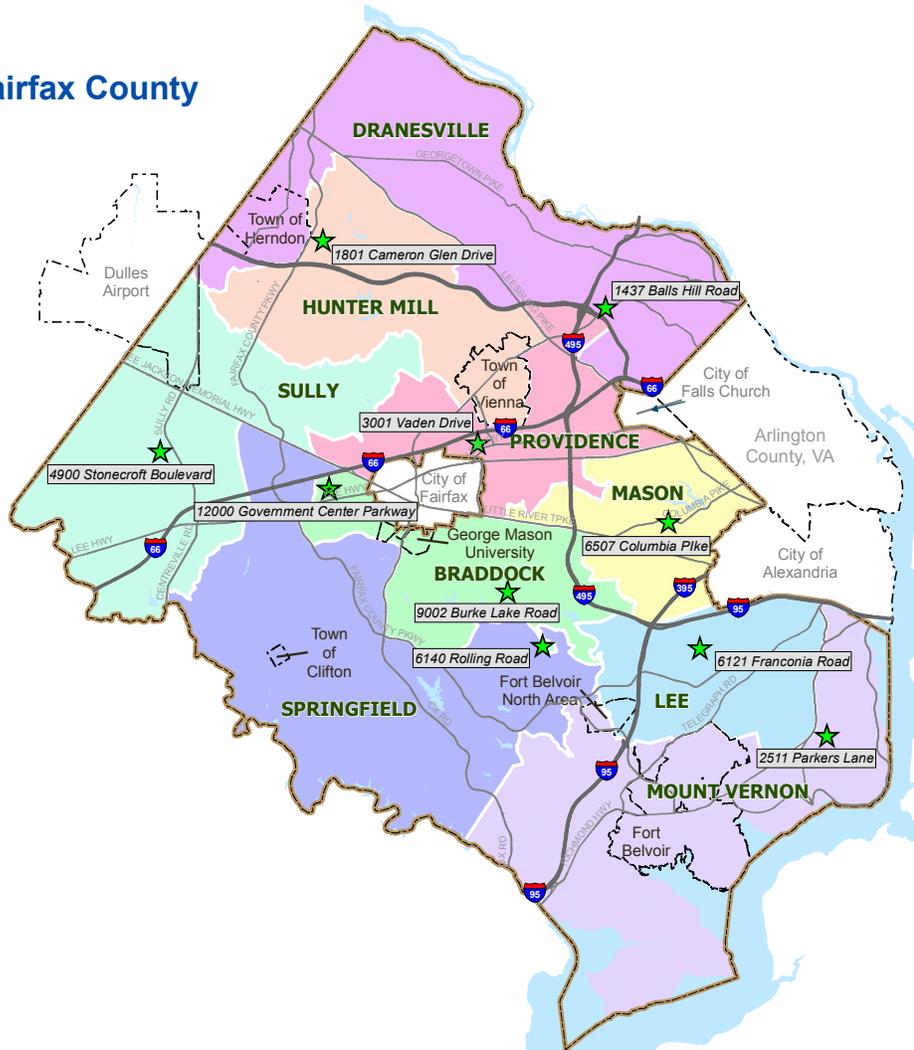
The Fairfax County government is organized under the Urban County Executive form of government as defined in the Code of Virginia. The county's governing body is the Board of Supervisors.

The Board of Supervisors consists of ten members: the chairman (elected at large) and one member from each of the nine supervisor districts of approximately equal population. The supervisors (other than the chairman) must be residents and qualified voters of their districts and may be elected only by voters living in those districts. All voters in the county may vote for the chairman. Each year, the board elects the vice chairman from among its members at its first meeting in January. Board members are elected for four-year terms. There is no legal limit to the number of terms a member can serve.

Supervisor Districts in Fairfax County

Supervisor Offices

- ★ Office Addresses
- ★ Chairman's Office



The Fairfax County Board of Supervisors



Front row, from left to right:
Kathy L. Smith (Sully District);
Penelope A. Gross (Mason District,
Vice Chairman); **Dalia Palchik**
(Providence District); and **James**
Walkinshaw (Braddock District).

Back row, from left to right:
Walter L. Alcorn (Hunter Mill District);
Pat Herrity (Springfield District); **Daniel**
G. Storck (Mount Vernon District);
Jeffrey C. McKay (Chairman, At-Large);
John W. Foust (Dranesville District);
and **Rodney L. Lusk** (Lee District).

Chairman, At-Large

Jeffrey C. McKay

703-324-2321, TTY 711

www.fairfaxcounty.gov/chairman/

Braddock District Supervisor

James R. Walkinshaw

703-425-9300, TTY 711

www.fairfaxcounty.gov/braddock/

Dranesville District Supervisor

John W. Foust

703-356-0551, TTY 711

www.fairfaxcounty.gov/dranesville/

Hunter Mill District Supervisor

Walter L. Alcorn

703-478-0283, TTY 711

www.fairfaxcounty.gov/huntermill/

Lee District Supervisor

Rodney L. Lusk

703-971-6262, TTY 711

www.fairfaxcounty.gov/lee/

Mason District Supervisor and
Vice Chairman

Penelope A. Gross

703-256-7717, TTY 711

www.fairfaxcounty.gov/mason/

Mount Vernon District Supervisor

Daniel G. Storck

703-780-7518, TTY 711

www.fairfaxcounty.gov/mountvernon/

Providence District Supervisor

Dalia A. Palchik

703-560-6946, TTY 711

www.fairfaxcounty.gov/providence/

Springfield District Supervisor

Pat Herrity

703-451-8873, TTY 711

www.fairfaxcounty.gov/springfield/

Sully District Supervisor

Kathy L. Smith

703-814-7100, TTY 711

www.fairfaxcounty.gov/sully/

The board establishes county government policy, passes resolutions and ordinances (within the limits of its authority established by the Virginia General Assembly), approves the budget, sets local tax rates, approves land use plans and makes appointments to various positions. These actions are taken in open meetings, which the public is encouraged to attend. All discussions are held in public, with the exception of issues exempt from the Virginia Freedom of Information Act, such as legal or personnel issues.

Board members also participate in various committees, subcommittees and regional agencies, which are listed at www.fairfaxcounty.gov/boardofsupervisors/committees. Several board committees address aspects of sustainability, including the Environmental Committee, the Land Use Policy Committee, and the Transportation Committee. Each of these committees is a “committee of the whole,” or comprised of all board members.

Sustainability issues are also addressed in regional committees in which board members actively participate, including:

- Metropolitan Washington Council of Governments (COG) Region Forward Committee
- COG Climate, Energy and Environmental Policy Committee
- COG Metropolitan Washington Air Quality Committee
- COG Chesapeake Bay and Water Resources Policy Committee
- COG Task Force on Regional Water Supply Issues
- Potomac Watershed Roundtable
- Northern Virginia Regional Commission

The Board of Supervisors appoints a County Executive to act as the administrative head of the county. The County Executive serves at the pleasure of the Board of Supervisors, carries out the policies established by the Board of Supervisors, directs business and administrative procedures and recommends officers and personnel to be appointed by the board.

Like other Virginia local governments, Fairfax County has limited powers. Virginia courts have concluded that local governments in Virginia have only those powers that are:

- Specifically conferred on them by the Virginia General Assembly;
- Necessarily or fairly implied from a specific grant of authority;
- Essential to the purposes of government – not simply convenient, but indispensable.

This doctrine of limited authority for local governments is commonly called the Dillon Rule.

The Board of Supervisors web page, www.fairfaxcounty.gov/boardofsupervisors/, provides links to the board members' individual web pages, podcasts, RSS feeds, a "Find Your District Supervisor" application, Board of Supervisors' news, committee assignments, goals and priorities, pictures of presentations to residents and more. An organizational chart of Fairfax County government is available at www.fairfaxcounty.gov/topics/sites/topics/files/assets/documents/pdf/county-org-chart.pdf.

1.2.2 Cities and Towns

In Virginia, cities and counties are distinct units of government and do not overlap. Fairfax County completely surrounds the City of Fairfax and is adjacent to the City of Falls Church and the City of Alexandria. Property within these cities is not subject to taxation by Fairfax County, and the county generally is not required to provide governmental services to their residents. However, pursuant to agreements with these cities, the county provides certain services to their residents.

Unlike cities, incorporated towns are overlapping units of government within the county. There are three incorporated towns in Fairfax County: Clifton, Herndon and Vienna. These towns have land use policies and regulations that are independent of the county's, although other county ordinances and regulations are generally effective in them. Property in these towns is subject to county taxation and the county provides certain services to their residents.

1.2.3 Boards, Authorities and Commissions

Advisory bodies and citizen participation play very important roles in Fairfax County government. The Board of Supervisors has established dozens of boards, authorities and commissions (BACs) to ensure that residents and other stakeholders are involved in all aspects of the county government's functions. Residents interested in serving on a county board, authority, commission or committee should contact their Supervisors.

A complete list of BACs is available at www.fairfaxcounty.gov/bacs/.
BACs with environmental roles include the following:

Boards, Authorities and Commissions	
Name	Purpose and Link
Agricultural and Forestal Districts Advisory Board	To advise the Board of Supervisors and Planning Commission regarding the proposed establishment, modification, renewal, continuation and determination of agricultural and forestal districts; to render expert advice on the desirability of establishing such districts. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23335
Airports Advisory Committee	To advise the Board of Supervisors on all airports and aircraft operations affecting Fairfax County; to expand the committee's responsibilities and feasibility of establishing a countywide aircraft noise complaint center. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23354
Board of Zoning Appeals	To hear and decide: (1) appeals of administrative decisions made pursuant to the Zoning Ordinance; (2) applications for special permits and variances as authorized by the Zoning Ordinance; and (3) applications for interpretation of the Zoning Map where there is uncertainty as to the location of a zoning district boundary. www.fairfaxcounty.gov/planning-development/board-zoning-appeals
Chesapeake Bay Preservation Ordinance Exception Review Committee	To review applications for approval/disapproval of exception requests to permit encroachments in Resource Protection Areas. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=100122
Engineering Standards Review Committee	To provide technical and engineering advisory services to the Board of Supervisors; to thoroughly review the input data for the annual update of the Public Facilities Manual. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23312
Environmental Quality Advisory Council	To advise the Board of Supervisors on environmental matters through ongoing review of the quality of the county's physical environment and to advocate and promote environmental preservation, protection and enhancement. www.fairfaxcounty.gov/environment-energy-coordination/environmental-quality-advisory-council
Fairfax County Park Authority	To be responsible for the acquisition, development and maintenance of the parks in the county. www.fairfaxcounty.gov/parks/

Boards, Authorities and Commissions	
Name	Purpose and Link
Geotechnical Review Board	To adopt ordinance amendments, official map and criteria regulating development in areas of Marumsco/Marine Clay soils and other problem soil areas. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23317
Health Care Advisory Board	To be responsible for a periodic review of a comprehensive health plan for the county; to initiate an on-going health care information process in coordination with local, regional, state and federal agencies. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23320
Planning Commission	To advise the Board of Supervisors on all matters related to the orderly growth and development of Fairfax County; to approve or disapprove the location, character and extent of all public facilities in the county. https://www.fairfaxcounty.gov/planningcommission/
Redevelopment and Housing Authority	To be responsible for providing rental housing for low-income families in Fairfax County. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23212
Trails, Sidewalks and Bikeways Committee	To report to the Board of Supervisors for the purpose of providing citizen input and oversight to planning and developing a countywide trails system. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23333
Transportation Advisory Commission	To advise the Board of Supervisors and provide information and comments on major transportation issues faced by the county. www.fairfaxcounty.gov/transportation/tac
Tree Commission	To provide advice to the Board of Supervisors based on an annual reevaluation of the administration and implementation of local law relating to vegetation preservation and planting; to provide leadership in developing an understanding of the objectives and methods of tree conservation; to assist the Urban Forest Management Division in the development and maintenance of technical specifications and guidelines. www.fairfaxcounty.gov/publicworks/tree-commission
Wetlands Board	To preserve and prevent the despoliation and destruction of wetlands within its jurisdiction while accommodating necessary economic development in a manner consistent with wetlands preservation. www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23219

1.2.4 Other Authorities and Commissions

The following authorities and commissions have regional environmental responsibilities:

Fairfax County Water Authority (FCWA) – FCWA, known as Fairfax Water, is Virginia’s largest water utility, serving nearly two million people. Fairfax Water operates two water treatment plants with a combined capacity of 376 million gallons per day and produces, on average, 166 million gallons of water per day. Fairfax Water also purchases up to 30 million gallons of water per day from the Washington Aqueduct. See www.fairfaxwater.org/.

Northern Virginia Regional Commission (NVRC) – NVRC is a regional council of 13 member governments in Northern Virginia. NVRC’s energy and environmental programs and projects include those addressing energy efficiency, water resources and solid waste and recycling. See www.novaregion.org/.

Northern Virginia Regional Park Authority (NOVA Parks) – NOVA Parks was established in 1959 to protect natural resources from the threat of urban sprawl and provide recreational amenities. Representing three counties and three cities, NOVA Parks currently owns about 7,000 acres in Fairfax County. See www.novaparks.com/.

Upper Occoquan Service Authority (UOSA) – UOSA was formed in 1971 to construct, finance and operate a regional water reclamation facility. It is currently authorized to process 54 million gallons of wastewater a day. See www.uosa.org/.

1.3 Energy and Environment Agencies and Business Areas

1.3.1 Office of Environmental and Energy Coordination

The Office of Environmental and Energy Coordination (OEEC), established in 2019, leads the county’s cross-organizational development and implementation of effective environmental and energy policies, goals, programs and projects. OEEC engages county departments, authorities, businesses, and residents to advance environmental and energy priorities and address community needs.

OEEC teams focus on climate planning, energy management, sustainability, and education and outreach. OEEC initiatives address a range of topics and issues, with examples including:

- **Fairfax County’s Community-Wide Energy and Climate Action Plan (CECAP)** to develop goals and identify and implement strategies and actions that will reduce the amount of greenhouse gases emitted in the county.
- **Resilient Fairfax**, an initiative to develop a comprehensive Climate Adaptation and Resilience Plan for the county and the community as well as the implementation of strategies to reduce risk to county residents, businesses, and infrastructure from climate impacts.
- **Coordination with county departments and agencies to advance the county’s goal of energy carbon neutrality in government operations by 2040 and associated targets and actions, as described in the 2021 Operational Energy Strategy.**
- **Involvement in activities to reduce fossil fuel emissions in county operations, including building efficiency and recommissioning, solar power purchase agreements and the installation of electric vehicle charging stations.**
- **Management of the HomeWise program, which educates, empowers, and enables residents to make changes that reduce energy use, water use, and associated costs in their homes and apartments.**
- **Monitoring and evaluating the energy consumption of county government operations and ensuring transparency by maintaining a public-facing dashboard that provides energy, cost, and emissions data for most government and Park Authority facilities and overseeing the county’s energy consumption webpages.**
- **Staffing the county’s Environmental Quality Advisory Council (EQAC), which is an independent, board- appointed advisory committee tasked with reporting the state of the environment in Fairfax County and in recommending policy and programmatic actions that the board can take in support of the environment.**

In addition, OEEC has assumed responsibility for numerous on-going activities, projects and programs, including administering the county’s Environmental Improvement Program; managing the county’s energy education and outreach program Energy Action Fairfax, including the Green Business Partners program; providing administrative support for a Commercial Property-Assessed Clean Energy (C-PACE) program; and supporting the board’s Environmental Committee and the inter-agency Environmental and Energy Advisory Committee. See www.fairfaxcounty.gov/environment-energy-coordination/.

1.3.2 Department of Public Works and Environmental Services

The mission of the Fairfax County Department of Public Works and Environmental Services (DPWES) is to build and maintain healthy, safe and environmentally responsible communities in Fairfax County. DPWES's areas of responsibility include building and infrastructure construction, solid waste management and stormwater and wastewater management. The following highlights several DPWES divisions:

- *Capital Facilities* provides Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely, and environmentally-sound manner. The Capital Facilities division implements the county's green building policy for county facilities, described in both Sections 2.2.8 and 4.2.1. See www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/sdpolicy.pdf.
- The *Solid Waste Management Program (SWMP)* oversees the county's municipal solid waste management system through public outreach, demonstrations of best management practices, and enforcement of the county's solid waste management ordinance and related environmental requirements. The program mission and statutory authority covers the storage, collection, recycling, and disposal of all municipal solid waste (MSW) generated within the county. The program provides refuse and recyclables collection to 45,000 county residences and all county government facilities and manages two MSW transfer and disposal sites. In addition, the SWMP implements the county's 20-year Solid Waste Management Plan, which is required by the Commonwealth to be reviewed and updated every five years. For decades, the program has also provided a suite of services that further promote sustainable values, including:
 - Source reduction, reuse and recycling education and outreach to residents and targeted industry/business sectors;
 - Ready access to recycling, through curbside and drop-off programs, for as many materials as practical within market limits;
 - The use of waste-to-energy (WTE) as the primary disposal technology;
 - Resource recovery to minimize impacts from waste disposal systems (e.g., metal recovery from WTE ash, landfill gas-to-energy);
 - Specialty waste collection such as E-waste and household hazardous waste;
 - Research and adoption of state-of-the-art technologies that support sustainable and efficient solid waste management and keep the county's integrated solid waste management system functioning well. Recent examples of the SWMP's work in this area include glass recycling and a pilot waste-food composting program, as well as using the closed portion of the I-95 landfill as a site for the generation of solar power.

More information about these programs is contained in Sections 2, 3 and 4. Also refer to www.fairfaxcounty.gov/publicworks/recycling-and-trash.

- **Stormwater Management** develops and maintains a comprehensive watershed and infrastructure management program that protects property, health and safety; enhances the quality of life; and preserves and improves the environment. The business area plans, designs, constructs, operates, maintains and inspects the county’s extensive stormwater infrastructure. It also performs environmental assessments through coordinated stormwater and maintenance projects. Several Stormwater Management initiatives are discussed in Section 3.4.1. See www.fairfaxcounty.gov/publicworks/stormwater.
- **Wastewater Management** safely collects and treats wastewater in compliance with all regulatory requirements using state-of-the art technology. The county’s wastewater collection and conveyance system, one of the nation’s largest sanitary sewer systems, covers nearly 257 square miles. The total system capacity is 157.18 million gallons of wastewater per day for about 340,000 residential and business connections in Fairfax County. See www.fairfaxcounty.gov/publicworks/wastewater.

1.3.3 Other County Departments

A number of other county departments and agencies play instrumental roles in promoting environmental stewardship and prudently managing natural resources.

- **Land Development Services** provides oversight and enforcement of site and building construction codes and regulations within the county, including environmental requirements like erosion and sediment control and Chesapeake Bay watershed regulations. For an overview of the land development process in Fairfax County, see www.fairfaxcounty.gov/landdevelopment/.
- **Fairfax County Park Authority (FCPA)**, which was created in 1950 by the Board of Supervisors, currently owns over 23,000 acres in Fairfax County. Its mission, as expressed in its *Great Parks, Great Communities Plan*, is:

To set aside public spaces for and assist citizens in the protection and enhancement of environmental values, diversity of natural habitats and cultural heritage to guarantee that these resources will be available to both present and future generations. To create and sustain quality facilities and services that offer citizens opportunities for recreation, improvement of their physical and mental well-being, and enhancement of their quality of life.

More information about FCPA, including its resource management practices, is provided in Section 3.6. See www.fairfaxcounty.gov/parks/.

- *Department of Planning and Development (DPD)* provides proposals, advice and assistance on land use, development review and zoning issues to those who make decisions on such issues in Fairfax County. DPD's mission is to promote livable communities which enhance the quality of life for the present and the future. See www.fairfaxcounty.gov/planning-development/.
- *Facilities Management Department (FMD)* provides a full range of facility management services to the approximately 240 county-owned and leased facilities in its portfolio. Key FMD services include energy management, capital renewal, maintenance, repair and renovation. The department also provides space planning and interior design services, as well as custodial, security and moving services. Several of FMD's energy-related initiatives and accomplishments are described in Section 4.4.
- *Department of Health*, through its Division of Environmental Health (DEH), protects and improves public health by using its regulatory authority and community-based outreach activities to prevent, minimize and/or eliminate exposure to biological, chemical or physical hazards.

DEH's regulatory activities include the permitting and inspection of the operations of various businesses and public facilities. DEH specialists also investigate reports of public health and safety menaces, conduct mosquito and tick surveillance, and offer a broad range of educational activities. Section 3.9 discusses five of the potential environmental hazards and exposures that pose a risk to human health that DEH addresses: contaminated ground and surface water; vector-borne diseases; rabies; radon; and naturally-occurring asbestos.

For more information about DEH, see www.fairfaxcounty.gov/health/environment.

1.4 Regional and Partner Collaboration

1.4.1 Regional Collaboration

As discussed in Section 1.2.1, board members are active participants in committees and initiatives within the metropolitan Washington, D.C. region, particularly those sponsored by the Metropolitan Washington Council of Governments (COG) and the Northern Virginia Regional Commission.

County staff is also active on a regional basis. The COG committees and boards in which county staff participates includes:

- Climate, Energy and Environment Policy Committee.
- Built Environment and Energy Advisory Committee.

- Metropolitan Washington Air Quality Committee (MWAQC) and the MWAQC Technical Advisory Committee.
- Transportation Planning Board.

Information about the Metropolitan Washington Council of Governments as well as its committees and boards is available at www.mwcog.org/.

Information about the Northern Virginia Regional Commission, including its programs and projects, is available at www.novaregion.org/.

1.4.2 Partner Organizations

Fairfax County provides financial or other tangible support to a number of agencies and nonprofit organizations that promote the general health and welfare of the community. The county's environmental partners and their activities are described below.

Clean Fairfax Council works to prevent litter, promote community clean-ups, encourage recycling and promote sustainability. See www.cleanfairfax.org/.

Earth Sangha promotes conservation through its native plant nursery and ecological restoration projects. See www.earthsangha.org/.

Fairfax County Restoration Project connects, creates and promotes efforts to restore ecosystem functions through collaboration with public, private, and volunteer organizations. See www.fcrpp3.org/.

Fairfax ReLeaf works to conserve, restore and promote sustainable urban forests by engaging volunteers in tree planting projects. See www.fairfaxreleaf.org/FFR/Index.html.

Northern Virginia Conservation Trust helps local governments and private landowners preserve open spaces and natural areas through various tools including voluntary conservation easements. See www.nvct.org/.



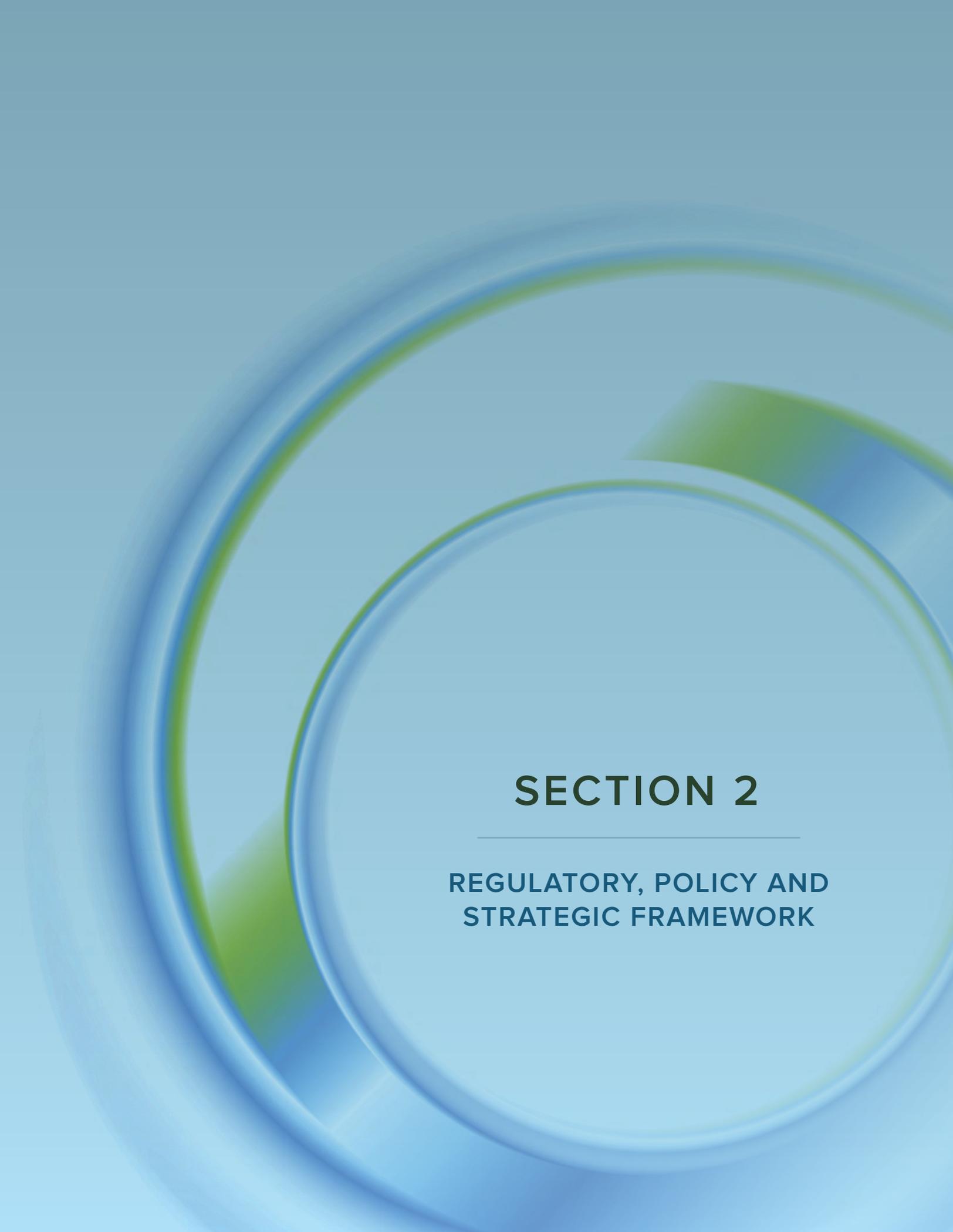
Earth Day planting at the Government Center

Photo credit: Dennis O'Conner

Northern Virginia Soil and Water Conservation District works to promote sustainable urban and suburban activities and stewardship to conserve the soil, water, air, plants, and animal resources in Fairfax County.

See www.fairfaxcounty.gov/soil-water-conservation/.

Volunteer Fairfax mobilizes people and resources to meet regional community needs by matchings the skills and interests of volunteers and donors to the needs of local nonprofit organizations, helping to build a better community through service. See www.volunteerfairfax.org/.



SECTION 2

REGULATORY, POLICY AND
STRATEGIC FRAMEWORK

REGULATORY, POLICY AND STRATEGIC FRAMEWORK

Featured in this Section

2.1	Introduction	31
2.2	Policies Adopted by the Board of Supervisors	31
2.2.1	Priorities and Goals	31
2.2.2	Environmental Vision	33
2.2.3	Cool Counties and Carbon Neutral Counties Declarations	34
2.2.4	Operational Energy Strategy: 2018 and 2021	35
2.2.5	Comprehensive Plan	36
2.2.6	Tree Action Plan	38
2.2.7	Solid Waste Management Plan	39
2.2.8	Sustainable Development Policy for Capital Projects	39
2.2.9	Fairfax County Park Authority Policy	41
2.3	Ordinances Adopted by the Board of Supervisors	42
2.4	Funding Mechanisms	43

SECTION 2

2.1 Introduction

The Fairfax County Board of Supervisors (board) has set the framework for the county's environmental initiatives through its vision, goals, policies, strategies and ordinances and has dedicated considerable resources to implementing these initiatives. This section of the report addresses this framework.

The board's vision statement includes the following (paraphrased):

Our vision is to protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County by maintaining safe and caring communities, building livable spaces, connecting people and places, maintaining healthy economies, practicing environmental stewardship, creating a culture of engagement and exercising corporate stewardship.

We envision that local government, industry and residents will seek ways to use all resources wisely and to protect and enhance the county's natural environment and open space. As a result, residents will feel good about their quality of life and embrace environmental stewardship as a personal and shared responsibility.

The county's Vision and Vision Elements are presented in the Strategic Plan to Facilitate the Economic Success of Fairfax County, which is available at www.fairfaxcounty.gov/economic-success/sites/economic-success/files/assets/documents/pdf/strategic-plan-facilitate-economic-success-2015.pdf.

2.2 Policies Adopted by the Board of Supervisors

2.2.1 Priorities and Goals

Environmental initiatives are driven by priorities and goals agreed upon at the highest levels of the county government.

Through its Statement of Priorities, the Board of Supervisors has pledged to engage residents and businesses and protect investments in eight critical areas, including "a clean, sustainable environment."

Fairfax County will continue to protect our drinking water, air quality, stream valleys and tree canopy through responsible environmental regulations and practices. We will continue to take a lead in initiatives to address energy efficiency and sustainability and to preserve and protect open space for our residents to enjoy.

Fairfax County Statement of Priorities, available at www.fairfaxcounty.gov/boardofsupervisors/priorities.

The county's goals, adopted by the Board of Supervisors in 1988 and subsequently revised, serve as the basis for the Comprehensive Plan, discussed in Section 2.2.5, and encompass all aspects of the county government. Of the 20 adopted goals, many speak directly to environmental protection and resource conservation:

Environmental Protection – *The amount and distribution of population density and land uses in Fairfax County should be consistent with water quality, ambient air quality and other environmental standards. Development in Fairfax County should be sensitive to the natural setting, in order to prevent degradation of the County's natural environment.*

Energy Conservation – *Fairfax County should promote energy efficiency and energy conservation within the public, commercial, residential, and industrial sectors.*

Open Space – *Fairfax County should support the conservation of appropriate land areas in a natural state to preserve, protect and enhance stream valleys, meadows, woodlands, wetlands, farmland, and plant and animal life. Small areas of open space should also be preserved in already congested and developed areas for passive neighborhood uses, visual relief, scenic value, and screening and buffering purposes.*

Three other goals, "Quality of Life," "Land Use" and "Transportation," also have environmental components. The Fairfax County goals reflect the belief of the community that environmental protection and preservation are overarching components of the quality of life. They demonstrate an understanding of the interdependence of decisions regarding private development, transportation and public works with the environment. How we use land affects, and is affected by, the natural environment.

On October 5, 2021, the board renewed its support for these environmental priorities and goals when it adopted its first-ever Countywide Strategic Plan. The plan, which was developed with significant community input, is intended to define a clear and compelling vision for the Fairfax County community, to prioritize the specific actions that address the county's most critical challenges, and to move towards that vision while tracking and sharing progress. The countywide strategic plan includes "Environment" as one of 10 community outcomes, with the vision that "all people live in a healthy sustainable environment." This plan includes for board consideration 11 proposed strategies that can be implemented over time to promote and ensure environmental sustainability.

The board's Statement of Priorities is available at www.fairfaxcounty.gov/boardofsupervisors/priorities. The county's goals are available at www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/compplan/policy/preface.pdf. The Communitywide Strategic Plan and related materials are available at www.fairfaxcounty.gov/strategicplan/.

2.2.2 Environmental Vision

Fairfax County has long recognized the need for proactive policies and initiatives to address its environmental challenges. Indeed, environmental considerations are embedded in the county's policy and regulatory documents, and the county has pursued a myriad of environmental initiatives that continue to grow in number and complexity.

For this reason, among others, at its regular meeting on Monday, June 21, 2004, the board, in continuation of its long history of environmental vigilance and dedication, endorsed and adopted the "Environmental Excellence for Fairfax County: A 20-year Vision," also known as the Environmental Vision, or Environmental Agenda. The Environmental Vision was revised in 2007 and was updated comprehensively in 2017; the updated Environmental Vision document was adopted by the Board of Supervisors on June 20, 2017, after an extensive community engagement process.

As articulated in a preface from Sharon Bulova, former Chairman of the Board of Supervisors, the updated Environmental Vision document establishes *"an overarching vision to attain a quality environment that provides for a high quality of life and is sustainable for future generations. These aspects of a quality environment are essential for everyone living and working in Fairfax County. No matter what income, age, gender, ethnicity, or address, everyone has a need and right to breathe clean air, to drink clean water, and to live and work in a quality environment."*

The updated Environmental Vision document is premised on the same two principles originally adopted by the board in 2004. First, that *"conservation of our limited natural resources must be interwoven into all government decisions."* Second, that *"the Board must be committed to providing the necessary resources to protect and improve our environment for quality of life now and for future generations."*

The Vision now includes sections on:

- Land Use
- Transportation
- Water
- Waste Management
- Parks and Ecological Resources
- Climate and Energy
- Environmental Stewardship

The Environmental Vision provides guidance for board members, county staff and the community when making decisions that have environmental impacts. Environmental concerns are not seen as trade-offs or compromises but, instead, are foundational to the decision-making process. The Environmental



Vision is an aggressive, multi-year plan that will require a long-term financial commitment. The board's Environmental Vision is available at www.fairfaxcounty.gov/environment/environmental-vision.

2.2.3 Cool Counties (2007) and the Carbon Neutral Counties (2021) Declarations

On July 16, 2007, the Board of Supervisors signed the Cool Counties Climate Stabilization Declaration, in which it pledged to take certain actions to reduce global warming emissions. Fairfax County had helped lead the national Cool Counties effort in collaboration with local, regional and national partners. The Cool Counties initiative called for the development of local greenhouse gas (GHG) emissions inventories and for the reduction of county geographical GHG emissions by 80 percent below 2005 levels by 2050; it also urged federal actors to enact measures to meet the emissions reduction goal, including more stringent fuel economy standards. The 2050 goal was one of several emission reduction goals adopted by the Metropolitan Washington Council of Governments in 2008.

County efforts to reduce GHG emissions associated with government operations, in conjunction with increasing vehicle fuel efficiency standards and a shift by the electric utility industry away from coal-fired electricity generation, resulted in Fairfax County's community-wide GHG emissions decreasing 13 percent between 2005 and 2018, according to the results of the county's 2021 GHG emissions inventory, despite a 15 percent growth in population. During this same period, per capita emissions decreased 24 percent.

With many of the commitments in the Cool Counties Declaration fulfilled, and recognizing the need for greater effort, in April 2019 the Fairfax County Board of Supervisors and the Fairfax County School Board formed the Joint Environmental Task Force, or JET. The JET's mission was to join the political and administrative capabilities of the county and the school system to proactively address climate change and environmental sustainability in areas of common influence. The JET issued its Final Report in October 2020. That report included an overarching recommendation of energy carbon neutrality in government and school operations by 2040 and supporting recommendations in the areas of energy, transportation, waste and recycling, and workforce development. That same month, the board accepted the JET Final Report and directed staff to begin work on an implementation plan. The resulting plan, the 2021 Operational Energy Strategy, is discussed in Section 2.2.4.

On July 13, 2021, the board considered and adopted a Carbon Neutral Counties Declaration, consistent with the overarching JET recommendation. In signing this Declaration, the county committed to:

- Energy carbon neutrality by 2040, prioritizing the reduction of operational greenhouse gas emissions;
- Urging federal and state lawmakers to provide incentives, requirements or other such measures to meet the carbon neutral goal; and

- Ensuring equitable implementation of the goal so that no communities are disproportionately impacted by the transition to a carbon neutral economy, and all have access to the incentives that may arise.

There currently is no organized alliance for U.S. counties dedicated to carbon neutrality. As such, the Carbon Neutral Counties Declaration offers other local governments an opportunity to join Fairfax County in significantly reducing carbon emissions by transforming government operations.

More information about Cool Counties initiative is available at www.fairfaxcounty.gov/environment/cool-counties-explained and www.fairfaxcounty.gov/environment/us-cool-counties-climate-stabilization-declaration. Fairfax County's 2021 GHG emissions inventory results are summarized at www.fairfaxcounty.gov/environment-energy-coordination/sites/environment-energy-coordination/files/assets/documents/pdf/fairfax%20county%20cog%20ghg%20factsheet_final%202021_a-1a.pdf. Information about the JET, including its October 2020 Final Report, is available at www.fairfaxcounty.gov/environment-energy-coordination/joint-environmental-task-force. The Carbon Neutral Counties Declaration is available at www.fairfaxcounty.gov/environment-energy-coordination/carbon-neutral-counties-declaration.

2.2.4 Operational Energy Strategy: 2018 and 2021

In adopting its updated Environmental Vision in 2017, the board added a Climate and Energy section with objectives in the areas of energy efficiency, conservation and renewable energy. These objectives are intended to reduce both the county's operational use of energy from fossil fuel sources and the GHG emissions associated with that energy use. During the 2017 meeting at which it adopted its updated Environmental Vision, the board directed staff to develop an energy strategy for internal county operations consistent with the updated Vision's new Climate and Energy section. On July 10, 2018, the board adopted its first-ever Operational Energy Strategy, setting goals and targets in 10 focus areas, including energy use and efficiency, green buildings, electric vehicles, and waste management. The Energy Strategy also sought to promote an energy-conscious culture within the county's workplace.

In October 2020, after accepting the JET's Final Report, the board directed staff to begin work on a plan to implement the JET recommendations, including the overarching goal of energy carbon neutrality by 2040. In working on that plan, it quickly became apparent to both staff and the board that achieving the JET's recommended goal of carbon neutrality by 2040 would require a re-imagining of the 2018 Operational Energy Strategy and substantial revisions to the goals, targets and actions of most of the focus areas.

On July 13, 2021 – the same date that it adopted the Carbon Neutral Counties Declaration – the board adopted the updated Operational Energy Strategy (2021). The 2021 Energy Strategy, which supersedes the 2018 Strategy, is intended to implement the Declaration's commitment to energy carbon neutrality by 2040 by setting forth transformational targets for fossil fuel

energy used by county buildings, facilities, fleets and other operations. It is intended to clearly communicate county objectives regarding emissions reductions and to provide guidance for achieving them, subject to support, including adequate staffing and resources and dedicated funding. The focus areas of the 2021 Energy Strategy are:

- Greenhouse Gas Emissions Reductions
- Energy Use and Efficiency
- Water Use and Efficiency
- Green Buildings
- Renewables
- Fleet Electrification
- Goods and Services
- Waste Management and Recycling
- Awareness and Engagement
- Utility Cost Management
- Reporting and Collaboration

The 2021 Energy Strategy recognizes that reaching the goal of energy carbon neutrality by 2040 will require a sustained, multi-pronged effort to reduce fossil fuel use, thereby reducing the carbon dioxide emissions that drive global warming. It also recognizes that reaching the 2040 goal will require dedicated resources and funding, the collaboration and cooperation of all levels of Fairfax County government, and external support including updated federal and state laws and policies and technological, market and other developments, especially in the areas of vehicle emissions and fleet electrification. Fortunately, actions that reduce fossil fuel use not only avoid carbon emissions, they also tend to lower utility bills, thus providing both environmental and fiscal benefits.

The 2017 Environmental Vision is available at www.fairfaxcounty.gov/environment/environmental-vision. The 2021 Operational Energy Strategy is available at www.fairfaxcounty.gov/environment-energy-coordination/sites/environment-energy-coordination/files/assets/documents/fairfax-county-operational-energy-strategy-2021.pdf.

2.2.5 Comprehensive Plan

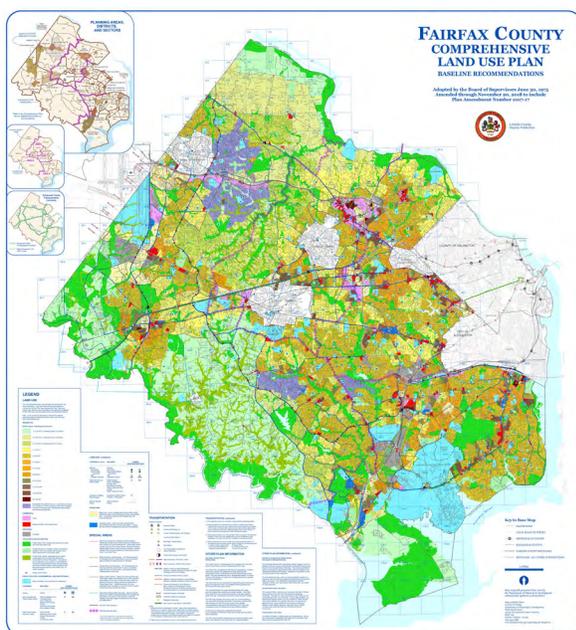
The Comprehensive Plan serves as a guide for the Board of Supervisors, the Planning Commission, the Board of Zoning Appeals, county staff, and the citizens of Fairfax County with respect to development and redevelopment in the county.

The Comprehensive Plan consists of the Policy Plan, four Area Plans, the Land Use Plan map, the Countywide Trails Plan map, the Bicycle Plan map, and the Transportation Plan map. The purpose of the Policy Plan is to provide a

concise statement of objectives, policies, and guidelines for implementing the county's goals about the future development pattern of the built environment and the preservation of the natural and cultural resources in Fairfax County. The Area Plans are key elements for implementing the Policy Plan's goals and objectives at the more detailed Planning District and Community Planning Sector levels. Development proposals requiring zoning approval are evaluated in regard to how they would implement or otherwise support both Policy Plan and Area Plan guidance.

The Policy Plan contains goals, objectives, and policies relating to 11 functional elements, listed below, a Chesapeake Bay Supplement, and a Glossary:

- Land Use
- Transportation
- Housing
- Environment
- Economic Development
- Heritage Resources
- Public Facilities
- Human Services
- Parks and Recreation
- Revitalization
- Visual and Performing Arts



The Plan map may be viewed at a larger scale at: www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/documents/maps/comprehensive-plan-map.pdf

The policies and objectives of the Environment element address Environmental Pollution, Light Pollution, Environmental Hazards, Environmental Resources, Environmental Coordination, Resource Conservation and Green Building Practices. This element provides guidance for achieving a balance between the need to protect the environment while planning for the orderly development and redevelopment of the county. The objectives and policies have been designed to help decision makers implement policies and regulations regarding the use of land that will conserve and restore a legacy of natural resources. The current scarcity of certain environmental amenities focuses current and future environmental planning efforts on the conservation of remaining resources and the rehabilitation of degraded environments.

More information about the county's growth and land use policies is presented in Section 3.2 of this report. See also www.fairfaxcounty.gov/planning-development/fairfax-county-comprehensive-plan.

2.2.6 Tree Action Plan

The Tree Action Plan, first adopted in December 2006, is a 20-year strategy to preserve and restore tree cover in Fairfax County. Tree Commission members, staff, residents, and builders worked together to develop the initial plan, the goals of which were to:

- Commit to preserve current tree assets by fostering health and regeneration of specimen trees and urban forest;
- Enhance the legacy for future generations by increasing the quantity and quality of trees and wooded areas; and
- More effectively integrate urban forestry with planning and policy-making.

After the completion of the initial plan, the board adopted a 30-year goal to increase tree cover to 45 percent by the year 2037. A study in 2017, using high resolution satellite imagery, found that more than 53 percent of the county is covered by tree canopy, which demonstrated that prior years' efforts were producing beneficial results.

In 2017, Tree Commission members, urban forestry staff, and stakeholders began drafting an update to the Tree Action Plan. A draft of the updated plan was completed in 2018 and presented to the board's Environmental Committee in October 2018. The revised plan, which includes an urban forestry strategic plan and an approach to its implementation, was unanimously approved in 2020 by the Board of Supervisors.

The strategic plan component of the Tree Action Plan includes five goals and 24 core recommendations that specify what must be done to manage the county's urban forest. The five goals are to:

- Know what we have.
- Protect and improve what we have.

- Expand what we have.
- Improve urban forestry policies and processes.
- Communicate and build partnerships.

Together, the goals and core recommendations create a framework that provides the strategies for managing trees and forests to enhance their health, value, and sustainability, and to mitigate the stressors that threaten to reduce the benefits and services that contribute extensively to our quality of life.

More information is available at www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/treeactionplan.pdf and in Section 3.6.4.

2.2.7 Solid Waste Management Plan

The Virginia Department of Environmental Quality (VDEQ) requires that all jurisdictions prepare a 20-year integrated solid waste management plan. Fairfax County's Solid Waste Management Plan, accepted by VDEQ in 2005 and revised in 2010 and 2015, is a 20-year strategy to ensure adequate capacity for the solid waste generated within Fairfax County.

County staff, working with stakeholders throughout the solid waste management system, reviewed current waste generation, activities and programs. Staff designed the future solid waste management system around the following strategic goals:

- Maintain a balanced solid waste management system that benefits the community while following regulatory requirements.
- Provide efficient and economical refuse collection, recycling and disposal services.
- Reduce the volume of the solid waste stream through the implementation of waste reduction and recycling programs.
- Provide for the operation of sanitary waste disposal facilities, utilizing the most environmentally acceptable and economically viable methods available.

Solid waste planning is an ongoing process and county staff will continue to evaluate the need to update and modify the Plan throughout the 20-year planning period.

Program operations are summarized in Section 3.5. The Solid Waste Management Plan is available at www.fairfaxcounty.gov/publicworks/recycling-trash/solid-waste-management-plan-update-2015-2035.

2.2.8 Sustainable Development Policy for Capital Projects

The county supports green building in its capital projects and in private sector development. Green building for county facilities is addressed in the Green Building focus area of the 2021 Operational Energy Strategy and the Sustainable Development Policy for Capital Projects, along with the Public

Facilities and Environment elements of the Policy Plan. The Environment element of the Policy Plan addresses private sector development.

The green building policy for Fairfax County facilities dates to 2008, when the Board of Supervisors adopted the Sustainable Development Policy for Capital Projects. This policy required that the construction of new county buildings and major renovations or additions to existing buildings meet or exceed minimum green building standards. The 2008 policy was strengthened somewhat by the 2018 Operational Energy Strategy, which included a green building target of LEED Silver certification for projects to which the policy applied.

In September 2020, the board adopted an update to the Sustainable Development Policy that demonstrated a greater commitment to environmental, economic, and social stewardship. This 2020 update included incremental strengthening of the energy performance improvement criteria and a multi-year transition to Net Zero Energy (NZE).

In July 2021, following its adoption of the Carbon Neutral Counties Declaration and as part of its adoption of the 2021 Operational Energy Strategy, the board further strengthened its green building policies in two key respects, effectively superseding the September 2020 update to the Sustainable Development Policy. First, it adopted a Net Zero Energy (NZE) standard for new construction and major renovations. Specifically, county facilities with an occupied area of greater than 10,000 square feet, planned and in design in 2021 and beyond, are to be designed to meet NZE standards, unless the board is advised prior to 30 percent design as to why the project could not meet NZE. The minimum certification for county projects is Leadership in Energy and Environmental Design (LEED®) Gold, plus 50 percent more efficient than baseline. Second, the board adopted building electrification requirements to minimize or eliminate on-site consumption of GHG-emitting fuels, including natural gas. Specifically, all new facilities of greater than 10,000 square feet, construction, additions, and major renovations: (i) beginning in FY 2022 or later, must be electric-ready; and (ii) beginning design in FY 2024 or later, must use only electric equipment and appliances, unless no alternative can be identified. These updated standards are set forth in the Green Building focus area of the 2021 Operational Energy Strategy.

The board is also committed to ensuring optimum performance of its buildings. Maintaining optimum performance will require that staff regularly monitor and analyze building energy performance, identify existing buildings as priority candidates for system recommissioning, recommission priority buildings with an initial focus on buildings previously certified by LEED, and proactively manage building equipment and systems necessary to meet county energy consumption and carbon emission reduction goals.

As discussed in more detail in Section 4.2, minimizing fossil-fuel energy use is a fundamental design criterion for county buildings. Ensuring efficient building design requires multiple approaches, including the consideration of highly

efficient equipment in the design phase and evaluation of all building projects for possible on-site renewable energy generation, such as the inclusion of photovoltaic panels.

The Green Buildings Focus Area of the county's 2021 Operational Energy Strategy is available at www.fairfaxcounty.gov/environment-energy-coordination/sites/environment-energy-coordination/files/assets/documents/fairfax-county-operational-energy-strategy-2021.pdf.

2.2.9 Fairfax County Park Authority Policy

The Fairfax County Park Authority Board approved new mission and vision statements for the Park Authority at its meeting on June 27, 2018. Its mission is to “enrich quality of life for all members of the community through an enduring park system that provides a healthy environment, preserves natural and cultural heritage, offers inspiring recreational experiences, and promotes healthy lifestyles.” Its vision is to “Inspire a passion for parks, healthy lifestyles, and stewardship by providing a sustainable, dynamic, and inclusive park system to support a thriving community.” These mission and vision statements, as well as values, are available at <https://www.fairfaxcounty.gov/parks/mission-vision-values>.

The Fairfax County Park Authority (FCPA) manages over 23,000 acres, 427 parks, five nature centers, a horticultural center, more than 300 miles of trails, over 650 public garden plots, 220 playgrounds, 779 athletic fields and one of only four state natural area preserves in Northern Virginia.

The Fairfax County Park Authority Board, appointed by the Board of Supervisors, works collaboratively with constituents, partners, stakeholders and government leaders to champion the preservation and management of natural and cultural resources and to facilitate the development of park and recreational programs and facilities. To guide park planning and programs, numerous policies and plans have been adopted:

- *Fairfax County Comprehensive Plan – Parks and Recreation – The Policy Plan* provides guidance and goals for park planning and land use decisions affecting the conservation of natural and cultural resources, protection of environmental quality, and provision of parks and park facilities to meet countywide needs. More information is available at <https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/compplan/policy/parksrec.pdf>.
- *Fairfax County Park Authority Policy Manual* – This manual guides Park Authority Board and staff decision-making in accordance with the Park Authority mission, objectives and associated laws. More information is available at <https://www.fairfaxcounty.gov/parks/publications/policy-manual>.
- *Great Parks, Great Communities Parks and Recreation System Master Plan* – This document is a 10-year plan that includes goals and recommendations that set the policy framework for all FCPA plans, programs and initiatives. The

master plan is guided by the 2016 *Parks Count!* needs assessment findings and provides a long-term vision for the park system. More information is available at www.fairfaxcounty.gov/parks/sites/parks/files/assets/documents/plandev/master-plans/fcpa-park-system-master-plan.pdf.

- **Natural Resource Management Plan** – This plan coordinates agency-wide efforts to achieve the natural resource preservation mission of the Fairfax County Park Authority and implement agency Policy 201 – Natural Resources. More information is available at www.fairfaxcounty.gov/parks/sites/parks/files/assets/documents/naturalcultural/nrmp012914.pdf.
- **Cultural Resource Management Plan** – This plan provides the tools, policies and practices to best manage and protect cultural resources, both on parkland and countywide. More information is available at www.fairfaxcounty.gov/parks/sites/parks/files/assets/documents/naturalcultural/crmpfinal.pdf.
- **Park Master Plans** – These plans serve as general guides for appropriate park uses and facilities and their approximate locations within a specific park site and guide future park development and programming. More information is available at <https://www.fairfaxcounty.gov/parks/planning-development/masterplan-archives>.

2.3 Ordinances Adopted by the Board of Supervisors

Fairfax County’s regulations support, complement and implement the county’s environmental policies and state and federal mandates. They are the “*shall*” requirements that accompany the “*should*” policies. Both are critical to the success of the county’s comprehensive environmental program.

The Fairfax County Code contains all county-adopted ordinances and associated requirements. These ordinances are not static but are reviewed and updated as needed. The current set of county ordinances is available at www.fairfaxcounty.elaws.us/code/coor/.

Environmental ordinances and other ordinances with key environmental provisions in the County Code include:

- Chapter 62, Fire Protection
- Chapter 67.1, Sanitary Sewers and Sewage Disposal
- Chapter 68.1, Individual Sewage Disposal Facilities
- Chapter 70.1, Private Water Well Ordinance
- Chapter 101, Subdivision Provisions (including, by reference, the Public Facilities Manual)
- Chapter 103, Air Pollution Control
- Chapter 104, Erosion and Sedimentation Control

- Chapter 107, Problem Soils
- Chapter 108.1, Noise Ordinance
- Chapter 109.1, Solid Waste Management
- Chapter 112, Zoning Ordinance (including Floodplain Regulations, the Airport Noise Impact Overlay District and the Water Supply Protection Overlay District). (Available at www.fairfaxcounty.gov/planning-development/zoning-ordinance)
- Chapter 113, Water Use, Emergency Regulations
- Chapter 114, Agricultural and Forestal Districts of Statewide Significance
- Chapter 115, Local Agricultural and Forestal Districts
- Chapter 116, Wetlands Zoning Ordinance
- Chapter 118, Chesapeake Bay Preservation Ordinance
- Chapter 120, Heritage, Specimen, Memorial and Street Tree Ordinance
- Chapter 122, Tree Conservation Ordinance
- Chapter 123, Coastal Primary Sand Dune Zoning Ordinance
- Chapter 124, Stormwater Management Ordinance

Other ordinances also have environmental provisions that are secondary to other purposes.

2.4 Funding Mechanisms

Environmental initiatives are supported through several agencies and funds.

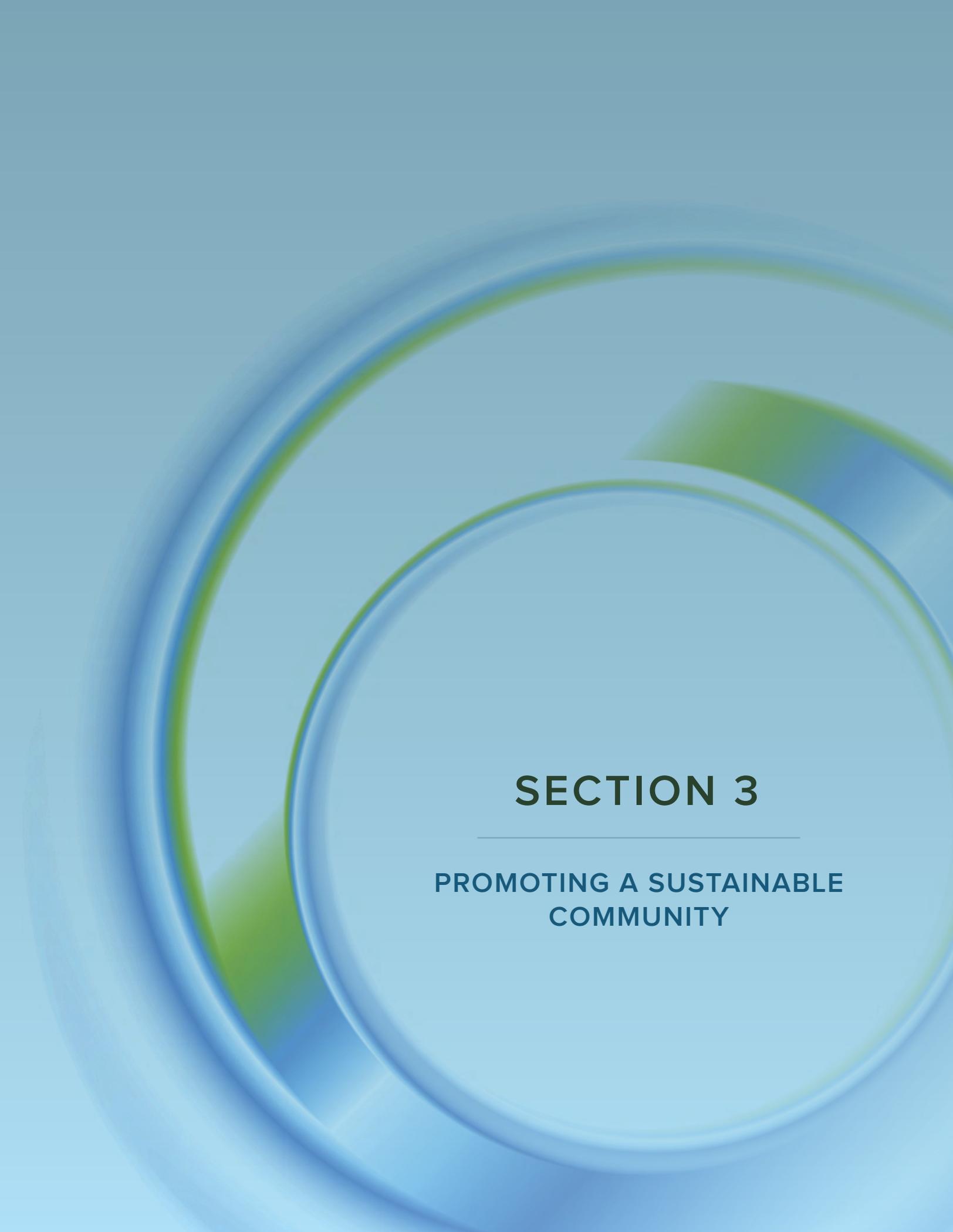
Fund 30015 of the county's General Fund supports projects that advance the County's Environmental Vision and Operational Energy Strategy. These projects include those identified for funding through the county's Environmental Improvement Program (EIP), which is discussed in more detail in Section 5.

Fund 30015 was created in FY 2021 to consolidate all projects associated with the Environmental and Energy Strategy Programs. Previously, funding for projects associated with environmental initiatives and energy strategies were budgeted in Fund 30010, General Construction and Contributions, and Fund 30020, Infrastructure Replacement and Upgrades. As part of the FY 2020 Carryover Review, all existing projects were moved to Fund 30015.

The General Fund also supports Earth Sangha, an environmental nonprofit organization which provides numerous volunteer opportunities involving environmental work, and Fairfax ReLeaf, a nonprofit organization that plants and preserves trees on public and common lands.

Several environmental program areas are supported through funding sources outside of the General Fund.

- The Wastewater Management Program (WWMP) tracks the amount of pollutants that are discharged from the county's wastewater treatment plant. The plant is in full compliance with more stringent requirements. The program is supported primarily by sewer service and connection fees. Funds are used to cover program costs, debt service payments and capital project requirements.
- The Solid Waste Management Program (SWMP) generates revenue through fees collected as part of the following services: a county-owned and operated refuse transfer station; a regional ash landfill; and refuse collection, disposal and recycling operations. Those funds support the maintenance of two closed landfills, environmental services such as household hazardous waste and electronic waste collection, code enforcement and source reduction and recycling outreach.
- The Stormwater Services (tax) District supports environmental mandates that protect the Chesapeake Bay and local tributaries. This fund is supported by a special service district fee based on 3.25 cents per \$100 of the assessed value of real estate. Funds are used to maintain the stormwater system, meet state and federal regulatory standards and meet dam safety requirements, among other efforts. The stormwater fee also supports contributions to both the Northern Virginia Soil and Water Conservation District (NVSWCD) and the Occoquan Watershed Monitoring Program (OWMP). The NVSWCD is an independent subdivision of the Commonwealth of Virginia that provides leadership in the conservation and protection of Fairfax County's soil and water resources. The OWMP and the Occoquan Watershed Monitoring Laboratory were established to ensure that water quality is monitored and protected in the Occoquan Watershed.



SECTION 3

PROMOTING A SUSTAINABLE
COMMUNITY

PROMOTING A SUSTAINABLE COMMUNITY

Featured in this Section

3.1	Introduction	47
3.2	Growth and Land Use	47
3.2.1	Zoning and Planning	48
3.2.2	Transit-Oriented Mixed-Use Development	49
3.2.3	Revitalization	50
3.2.4	Green Buildings	51
3.2.4.A	Green Building Policy	51
3.2.4.B	Green Building Priority Plan Review	53
3.2.4.C	County Incentives for Solar Installations	53
3.2.5	Noise, Light Pollution and Visual Pollution	53
3.2.5.A	Noise	53
3.2.5.B	Light Pollution	54
3.2.5.C	Visual Pollution	55
3.3	Air Quality and Transportation	55
3.3.1	Air Quality	56
3.3.1.A	Air Quality Planning in the Washington Metropolitan Region	56
3.3.1.B	Washington Metropolitan Air Quality Status	57
3.3.2	Transportation	57
3.3.2.A	Transportation Planning in the Washington Metropolitan Region	57
3.3.2.B	Fairfax County Multimodal Transportation Initiatives	58
3.4	Water	60
3.4.1	Stormwater	61
3.4.2	Wastewater	62
3.4.3	Water Supply Planning	63
3.5	Solid Waste Management	64
3.5.1	Recycling	64
3.5.2	SWMP Green Initiatives	65
3.6	Parks and Ecological Resources	67
3.6.1	Open Space in Fairfax County	67
3.6.2	Natural Resource Management	69
3.6.3	Policy and Regulatory Mechanisms for Protecting Natural Resources	70
3.6.3.A	Chesapeake Bay Preservation Ordinance	71
3.6.3.B	Stormwater Management Ordinance	71
3.6.3.C	Floodplain Regulation	72
3.6.3.D	Wetlands Zoning Ordinance	72
3.6.3.E	Comprehensive Plan Policy	74
3.6.4	Trees and Tree Conservation	74
3.6.4.A	Urban Forest Management	75
3.6.4.B	Tree Action Plan	76
3.7	Climate and Energy	76
3.7.1	Climate Change Planning and Action	77
3.7.1.A	Community-wide Energy and Climate Action Plan	77
3.7.1.B	Resilient Fairfax	79
3.7.2	Fairfax Green Initiatives	81
3.8	Environmental Stewardship and Outreach	81
3.8.1	Education and Outreach	81
3.8.1.A	Energy Action Fairfax and HomeWise	82
3.8.1.B	Fairfax County Park Authority	84
3.8.1.C	Department of Public Works and Environmental Services	84
3.8.2	Community Stewardship Opportunities	85
3.8.2.A	Watershed Volunteer Opportunities	85
3.8.2.B	Volunteer Opportunities in County Parks	86
3.8.2.C	Activities Offered by Northern Virginia Soil and Water Conservation District	86
3.8.2.D	Additional Service Opportunities	87
3.9	Environmental Health	87

SECTION 3

3.1 Introduction

Section 2 of this report identifies the broad policy framework guiding the county's sustainability initiatives. Section 3 addresses how the county advances that policy framework through promotion of sustainability within the community.

Environmental stewardship is both a key responsibility and a critical legacy of the Fairfax County Board of Supervisors. The Board's Environmental Vision, updated in 2017, affirms that environmental stewardship and prudent management of natural resources are essential responsibilities of local government that must be given the fullest consideration at all times. The Environmental Vision is available at www.fairfaxcounty.gov/environment/environmental-vision.

Achieving this goal of sustainability requires an on-going commitment to supporting environmental stewardship in every aspect of daily life.

Fairfax County's commitment to sustainability is demonstrated by an extensive range of policies, programs and efforts, including those promoting:

- Transit-oriented mixed-use development and green building practices.
- Healthy waterways and clean drinking water.
- Recycling, composting and other waste management initiatives that minimize use of landfills.
- Adaptive, holistic management of natural resources, forests and access to open space.
- Reduction of climate change impacts through climate action, adaptation and resilience planning.
- Outreach and educational programs that support environmental stewardship.
- Clean air and carbon emissions reductions.
- Reduction of environmental hazards to human health and quality of life (e.g., biological, chemical and physical hazards; noise, light pollution and visual pollution).

3.2 Growth and Land Use

Both Fairfax County and the larger metropolitan Washington, D.C. area are expected to experience substantial growth into the future. Fairfax County's 2018 population of approximately 1.17 million is projected to increase to over 1.42 million by 2045. Over this same period, the number of households is forecast to increase from nearly 404,000 to 528,000. The Metropolitan Washington Council of Governments (COG) estimates that between 2015 and 2045, the population in the region (i.e., jurisdictions within the COG/Transportation

Planning Board Planning Area) will grow from approximately 5.4 million to 6.9 million. COG estimates that during this same period, the region will add over 1.1 million jobs, with approximately 240,000 of these new jobs located in Fairfax County. The question, then, is not if the county will grow, but how it will grow.

The county's land use policies favor growth in mixed-use, transit-oriented centers. These centers provide for employment growth near both transit opportunities and residential areas. They also support vibrant communities by creating safe and attractive streets for pedestrians and reducing the need for vehicle trips and the resulting traffic congestion.

3.2.1 Zoning and Planning

Land use in Fairfax County is regulated by the Zoning Ordinance. Each parcel of land in the county is zoned, and the zoning classification establishes both rights and restrictions on the use and development of that parcel. These restrictions include allowed uses and standards, including setback, building height, open space and parking requirements. Additional requirements exist in "overlay" districts that have been established to address area-specific issues, such as water quality within the Occoquan Reservoir watershed.

Development that conforms to allowed uses and standards under the zoning ordinance proceeds "by right" – that is, it is approved administratively and does not require a public hearing. Legislative approvals following public hearings are required for other development. Specifically:

- Requests for special permit uses are subject to approval by the Board of Zoning Appeals.
- Requests for special exceptions or changes to the zoning of a parcel (i.e. rezonings) are subject to approval by the Board of Supervisors.

The Fairfax County Planning Commission holds public hearings and provides recommendations to the Board of Supervisors on all special exception and rezoning proposals.

In making decisions on these matters, members of the Board of Supervisors, Board of Zoning Appeals and the Planning Commission are guided by the Comprehensive Plan. This plan, which is discussed in Section 2.2.5, describes the county's land use vision for the future and includes countywide and area-specific policies to help attain this vision.

In March 2021, the Board of Supervisors adopted a new and modernized Zoning Ordinance as a part of the Zoning Ordinance Modernization (zMOD) project. This new Ordinance, which replaces the previous 1978 Ordinance, is easier to read and understand and includes more tables, graphics, and hyperlinks. The Ordinance has been integrated into a user-friendly online platform. The new Ordinance includes modernized land uses and regulations, and corrects gaps and

inconsistencies in other regulations. The regulations became effective on July 1, 2021. Specific changes in the Ordinance pertinent to the county’s sustainability initiatives include a new standard for roof-mounted solar collection systems and a new use intended to encourage electric vehicle adoption in the county.

More information about the Zoning Ordinance is available at www.fairfaxcounty.gov/planning-zoning/zoning-ordinance, while information about the zMOD project is available at www.fairfaxcounty.gov/planning-development/zmod.

Information about the zoning application and development review process is available at www.fairfaxcounty.gov/planning-zoning/zoning/application-development-review-process.

The Comprehensive Plan is available at www.fairfaxcounty.gov/planning-zoning/fairfax-county-comprehensive-plan.

3.2.2 Transit-Oriented Mixed-Use Development

The Policy Plan volume of the county’s Comprehensive Plan contains the Board of Supervisors’ goals, policies and objectives regarding land use, transportation, housing, the environment, economic development, heritage resources, human services, parks and recreation, public facilities, revitalization, and visual and performing arts.

The land use and transportation policies of the Comprehensive Plan emphasize locating mixed use development, including employment centers and multifamily housing, in activity centers (i.e., the Tysons Urban Center, Suburban Centers, Community Business Centers and Transit Station Areas) with transportation options, especially rail transit. Transit-oriented mixed-use development (TOD) guidelines were incorporated into the Policy Plan in March 2007.

In June 2010, the Board of Supervisors adopted an amendment to the Comprehensive Plan for the Tysons area. The Plan amendment, which was the culmination of one of the largest targeted planning efforts in county history, supports TOD concepts, including the provision of housing in employment centers. This amendment, which was designed to take advantage of the four new Metro stations that have now been built in the area, received the 2011 Daniel Burnham Award from the American Planning Association. This award is granted to only one urban plan in the nation each year for advancing the science and art of planning.



Plaza at Tysons

Other Plan amendments that support TOD concepts and/or mixed-use development and connectivity include those for Annandale, Baileys Crossroads, Seven Corners, Franconia-Springfield, the Lake Anne Village Center, the Fairfax Center Area, the Dulles Suburban Center, McLean, the Richmond Highway corridor (Embark study) and areas near existing and future rail stations in the Reston and Herndon areas. The Embark Richmond Highway Plan amendment received the 2018 Commonwealth Plan of the Year award from the American Planning Association's Virginia Chapter. Efforts to incorporate TOD, mixed-use and connectivity concepts into the Comprehensive Plan are continuing.

The Plan's guidance is implemented through the approval of zoning applications. Approved and pending rezoning applications regarding TOD and mixed-use development include those affecting properties in Tysons, Reston, the Dulles Suburban Center, Merrifield, Springfield and the Huntington and Vienna Metrorail station areas.

The Policy Plan is available at www.fairfaxcounty.gov/planning-zoning/comprehensive-plan/policy-plan. More information about TOD is available in the Land Use section of the Comprehensive Plan, available at www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/complan/policy/landuse.pdf, particularly Objectives 2, 6, 16 and Appendix 11.

3.2.3 Revitalization

Fairfax County's Department of Planning and Development (DPD) facilitates strategic redevelopment and investment opportunities within the older and transforming commercial activity centers of the county. These centers include the five Commercial Revitalization Districts (CRD) of Annandale, Baileys Crossroads/Seven Corners, McLean, Richmond Highway, Springfield; the two Commercial Revitalization Areas (CRA) of Lake Anne Village Center and Merrifield; the Springfield Town Center; Reston Transit Station Areas (TSA) and village centers; and the Tysons Urban Center (Tysons).

The Urban Centers and Community Revitalization Sections of DPD include a dedicated team of planning and design professionals who work with developers, property owners, community stakeholders, cross-agency teams and consultants to provide review and direction on zoning applications, site plans, Comprehensive Plan amendments, streetscape and wayfinding projects, infrastructure improvement projects, public outreach, special studies, urban design guidelines, solicitations regarding county facilities and related development, and public-private partnerships.

Board policy and DPD's work program have been instrumental in promoting a sustainable community through redevelopment and reinvestment. New incentives to reduce barriers for redevelopment and facilitate revitalization are

being implemented through countywide initiatives aimed at improving the development process.

To achieve and sustain revitalization goals and objectives, the county has adopted Plan



Mosaic District

guidance for each CRD/CRA, Tysons and Reston; incorporated the Urban Parks Framework into the Policy Plan; and adopted Urban Design Guidelines for many of its mixed-use activity centers, with the goal of adopting such standards for additional areas. These guidelines promote walkable, pedestrian-oriented, sustainable development and are used to evaluate development applications and site plans. In December 2017, the Board of Supervisors adopted an amendment to the Policy Plan volume of the Comprehensive Plan to facilitate, within county activity centers, the repurposing of office buildings for other uses. Plan guidance facilitating such repurposing efforts outside of these centers was adopted in May 2018.

Through the use of strategic financing mechanisms, such as the Community Development Authority/Tax Increment Financing (CDA/TIF) that was used for the Mosaic-Merrifield Town Center project, the county forms partnerships with the private sector to complete major projects that serve the public interest. More information about revitalization is available at fcrevit.org/.

3.2.4 Green Buildings

Green building techniques are encouraged in Fairfax County through policy and incentives.

3.2.4.A Green Building Policy

In addition to adopting a green building policy that applies to county capital projects, as discussed in Section 4.2.1, Fairfax County has adopted green building policies for private sector development. These policies are found in the Comprehensive Plan and are implemented through the zoning process.

The Policy Plan volume of the Comprehensive Plan includes broad support for green building practices. It also establishes links between green building/energy conservation practices and the attainment of certain Comprehensive Plan options and planned uses, as well as development densities and intensities. One example of these linkages involves proposals at the high end of the planned density/intensity range in the county's activity centers. In these centers, green building certification through the Leadership in Energy and



Dolley Madison Library

Environmental Design (LEED®) program or its equivalent is recommended for certain nonresidential and multi-family residential proposals. Another example that applies countywide is the recommendation for other residential projects to incorporate green building practices sufficient to attain certification under an established residential green building rating system that incorporates multiple green building concepts and includes an ENERGY STAR® Qualified Homes designation or comparable level of energy performance.

The Area Plan volumes of the Comprehensive Plan include area-specific green building policies. For example, the Tysons Urban Center Area Plan recommends a LEED Silver, or equivalent level of certification, for nonresidential development. Plan guidance recommends similar efforts for areas near or adjacent to the Town of Herndon, Reston's Transit Station Areas and the Huntington and Franconia-Springfield Metrorail stations. Another example of an area-specific policy is found in the Annandale Community Business Center Plan. This Plan includes an incentivized development option that allows for increased building heights in certain areas where any of a number of benefits are provided, including commitments to LEED Gold or LEED Platinum certifications.

During the zoning application review process, county staff receives commitments from applicants to achieve green building certification and other green building efforts for development proposals in accordance with Comprehensive Plan guidance. A majority of these commitments are linked to LEED certification or the equivalent, with many linked to LEED Silver certification or higher. In addition to formal third-party green building certification, the Comprehensive Plan encourages the incorporation of electric vehicle charging into development proposals.

For more information about the county's green building policies for private sector development, see Objective 13 at www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/compplan/policy/environment.pdf.

3.2.4.B Green Building Priority Plan Review

Both residential and commercial development projects that will be designed to attain certain thresholds of green building design are eligible for shorter waiting times during the building plan review process. Commercial projects designed to reach a minimum LEED rating of Silver or equivalent are eligible for this incentive, as are residential projects designed to, at a minimum, attain one of the following rating levels: LEED Silver; National Green Building Standards™ Silver; Earthcraft™ Select or Premium; or three to five “Globes” in the Green Globes™ rating system. Other green building rating programs are evaluated for approval on a case-by-case basis. For more information about green building priority plan review, see the qualifying criteria at www.fairfaxcounty.gov/landdevelopment/green-building-priority-plan-review.

3.2.4.C County Incentives for Solar Installations

Current solar incentives include zero cost for the permit fee (for solar hot water or solar photovoltaic projects) and a limited solar tax incentive in accordance with Virginia Code Section 58.1-3661. This is covered by the county ordinance in Article 18, Chapter 4 of the Fairfax County Code. Essentially, qualifying solar equipment as approved by the Department of Public Works and Environmental Services (DPWES) can result in a tax credit (not an exemption) against the amount of property taxes due. The credit is determined by applying the local tax rate to the value of the solar equipment (the value is typically the cost of the equipment).

The tax credit is available the first tax year following the date of application. The credit is good for five years. Although the concept for this was generally aimed at homes, both commercial and multi-unit residential properties qualify. More information about this program, along with application procedures and the application form, are available at www.fairfaxcounty.gov/taxes/relief/real-estate-solar-equipment.

In addition, it is possible to obtain a same-day solar permit if sufficient structural and electrical design information is provided to the walk-through counter at the county’s Permit Application Center, located at the Fairfax County Government Center.

3.2.5 Noise, Light Pollution and Visual Pollution

Noise, light pollution and visual pollution are considered to be sustainability issues, given that each can adversely affect the county’s environment and quality of life.

3.2.5.A Noise

The county has long had a Noise Ordinance that limits the noise that can be generated from stationary and other sources. However, noise generated from airport and highway operations is outside of the county’s regulatory purview.

Although noise generated from airport operations is not addressed in the Noise Ordinance, the county has taken steps to ensure that land uses near Washington Dulles International Airport will remain compatible with airport operations into the future. The Zoning Ordinance includes an Airport Noise Impact Overlay District in the area of the county near the airport, which establishes interior noise standards and associated acoustical mitigation requirements that apply to development that is pursued within the district. Additionally, Comprehensive Plan policy recommends against new residential development within specific areas near the airport. On July 28, 2020, the Board authorized the consideration of an amendment to this policy, to provide for an expansion of allowable residential uses within a specific area near the airport, as long as any such uses occur with commitments to noise mitigation measures, notification requirements, and construction techniques.

The Comprehensive Plan also provides guidance regarding land use compatibility near highways. Applying this guidance during the zoning process, the county has obtained commitments from developers to implement or install noise mitigation measures, including highway noise barriers and acoustical mitigation for noise-sensitive indoor areas.

A comprehensive set of links addressing various transportation and other noise-related concerns is available at www.fairfaxcounty.gov/planning-development/environment/noise.

3.2.5.B Light Pollution

“Light pollution” is used to describe light output, primarily from exterior (outdoor) sources, that is excessive in amount and/or that causes harmful glare directed into: (1) the path of travel; (2) light-sensitive areas such as residential neighborhoods; or (3) the sky in general. Light pollution can occur in commercial, residential and roadway settings.

Light pollution can interfere with enjoyment of the night sky. Improper lighting can also waste energy. In recognition of these impacts, the county has established an Outdoor Lighting Ordinance. To reduce glare, the ordinance requires full cut-off lighting fixtures in most cases. Such fixtures prevent light from being emitted at or above a horizontal plane drawn through the bottoms of the fixtures.

The requirements of the Outdoor Lighting Ordinance apply primarily to roof and canopy lighting, architectural and landscape lighting, recreation/sports facility lighting and internally-illuminated signs. In addition, the ordinance establishes after-hours parking lot lighting reduction requirements for developed nonresidential lots that contain four or more parking light poles. Effective February 2020, the lighting ordinance includes new standards for color temperature.

More information about the county's outdoor lighting rules is available at www.fairfaxcounty.gov/planning-development/zoning-ordinance/outdoor-lighting#:~:text=Outdoor%20Lighting%20Standards%20To%20reduce%20unwanted%20glare%2C%20Section,standards%20that%20became%20effective%20on%20February%202012%2C%202020.

3.2.5.C Visual Pollution

Litter, unkempt property and poorly placed signs are typically considered examples of visual pollution that degrade the environment. Fairfax County has taken steps to address visual pollution, including:

- Public outreach on litter-related issues. See www.fairfaxcounty.gov/publicworks/recycling-trash/litter.
- A blight abatement program that provides for the reporting and remediation of vacated or dilapidated structures. See www.fairfaxcounty.gov/code/blight.
- Zoning Ordinance limitations on signs. See www.fairfaxcounty.gov/planning-development/zoning/sign-permits.
- A review process for proposed telecommunications towers. See www.fairfaxcounty.gov/planning-zoning/public-facilities-review/telecommunications.

In addition, in early 2013, Fairfax County and the Virginia Department of Transportation (VDOT) finalized an agreement regarding signs placed in VDOT public rights-of-way. State law makes all such signs, including political advertising, illegal, with limited exceptions. The agreement authorizes the county, acting on behalf of VDOT, to remove the illegal signs and fine the offenders in accordance with the state code. The county's Illegal Sign Removal Program regularly picks up signs from selected major roads every week between Tuesday and Thursday. See www.fairfaxcounty.gov/topics/illegal-sign-removal-program.

3.3 Air Quality and Transportation

The federal Clean Air Act was passed in 1970 to protect public health and welfare. Congress amended the Act in 1990 to establish requirements for areas not meeting the National Ambient Air Quality Standards (NAAQS) for ground-level ozone (smog), nitrogen oxide (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), lead and particulate matter (PM). The metropolitan Washington region is a "Marginal" nonattainment area for the 2008 eight-hour standard for ground level ozone. The region is in compliance with the NAAQS for the other five criteria pollutants.

Since 1970, significant progress has been made in reducing mobile source emissions in the Washington Metropolitan region, despite increases in

population, employment and vehicle miles traveled. Most of these emissions reductions have resulted from cleaner vehicles and cleaner fuels.

3.3.1 Air Quality

3.3.1.A Air Quality Planning in the Washington Metropolitan Region

The Clean Air Act Amendments of 1990 (CAAA) established a legal process for evaluating air quality and identifying and classifying nonattainment areas according to the severity of their air pollution problems. Under Section 174 of the CAAA, the governors of Maryland and Virginia and the mayor of the District of Columbia certified the Metropolitan Washington Air Quality Committee (MWAQC) to develop specific recommendations for a regional air quality plan in the Washington, DC-MD-VA nonattainment area.

Members of MWAQC include: elected officials from the Cities of Bowie, College Park, Frederick, Gaithersburg, Greenbelt, Rockville and Takoma Park in Maryland, and Alexandria, Fairfax, Falls Church, Manassas and Manassas Park in Virginia; representatives of the Montgomery and Prince George's County councils; county executives from Montgomery and Prince George's Counties; the mayor of the District of Columbia and representatives of the Council of the District of Columbia; and representatives of Calvert, Charles and Frederick Counties in Maryland, and Arlington, Fairfax, Loudoun and Prince William Counties in Virginia. Representatives of the General Assemblies of Maryland and Virginia, the state air management directors, the state transportation directors and the chairman of the National Capital Region Transportation Planning Board also are members of MWAQC.

The Metropolitan Washington Council of Governments (COG), in close cooperation with state air quality and transportation agencies, provides technical support to MWAQC. Staff from the local counties and cities mentioned above provide additional technical support. MWAQC also has established an Air Quality Public Advisory Committee (AQPAC) to provide recommendations regarding public participation in the development of the air quality plans. AQPAC members represent academic, business, civic and environmental groups.

In addition, MWAQC works with the Interstate Air Quality Council (IAQC), a cabinet-level collaboration between the District of Columbia, the state of Maryland and the Commonwealth of Virginia that includes the secretaries of the environment and transportation in each of these jurisdictions. The purpose of the IAQC is to address issues of interstate air pollution and to provide a sound process for improving regional air quality.

Once MWAQC approves the air quality attainment plan, it will be forwarded to the Interstate Air Quality Council for approval. The governors and the mayor (or

their designees) are then required to submit the air quality State Implementation Plans (SIPs) to the U.S. Environmental Protection Agency (EPA) to meet the requirements of the CAAA.

3.3.1.B Washington Metropolitan Air Quality Status

The metropolitan Washington region has met National Ambient Air Quality Standards, often referred to as NAAQS, for carbon monoxide and fine particulate matter, but not for ozone pollution.

Carbon Monoxide – The region has been in attainment of the carbon monoxide NAAQS for more than the twenty-year period covered in its carbon monoxide maintenance plan and is projected to remain so into the future. Therefore, there are now fewer requirements to assess the effects of transportation projects and other developments on carbon monoxide emissions.

Fine Particulate Matter (PM_{2.5}) – The region is in attainment of both annual and daily PM_{2.5} NAAQS. Based on the 2014-2016 data, the Washington region's design values for the annual PM_{2.5} standard (12 pg/m) is 9.1 pg/m³ and the daily PM standard (35 pg/m³) is 21 pg/m³. Also, there was no exceedance of the daily PM_{2.5} standard in 2016.

Ozone – In May 2018, the Washington region was designated as a “Marginal” nonattainment area for the 2015 ozone NAAQS of 70 parts per billion (ppb). This determination was based on the quality assured data for 2014-2016 and the preliminary data for 2015-2017. Although the ozone design values for both time periods were 72 ppb, the region was not required to develop a new SIP containing new enforceable measures to reduce ozone levels.

The Washington region attained the 2008 ozone NAAQS (75 ppb) in 2015. In 2018, the region's request to re-designate the region to attainment/maintenance and a maintenance plan for the 2008 ozone NAAQS were approved by the EPA. The maintenance plan contains motor vehicle emissions budgets (mobile budgets) for volatile organic compounds (VOCs) and nitrogen oxides (NO_x).

3.3.2 Transportation

3.3.2.A Transportation Planning in the Washington Metropolitan Region

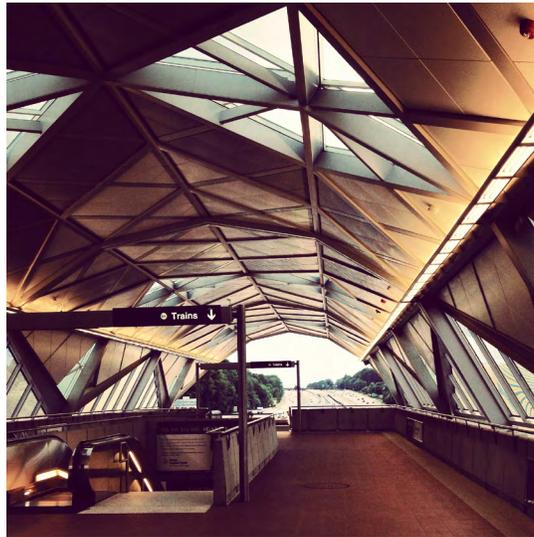
Transportation planning in the Washington metropolitan region is substantially informed by air quality planning. Transportation plans are tested to ensure that planned projects, when considered collectively, contribute to the air quality improvement goals outlined in the Clean Air Act Amendments of 1990 (CAAA). Computer models predict how much air pollution will be generated over the next 25 years by facilities in the plan, and can evaluate many other factors, such as cleaner gasoline standards.

If the transportation plan achieves regional air quality goals in the models, federal agencies certify that the plan is “in conformity.” If the plan does not achieve these goals, transportation agencies may be required to adopt Transportation Emission Reduction Measures, such as ridesharing and telecommuting programs, improved transit and bicycling facilities, clean fuel vehicle programs, or other measures.

State and local transportation agencies use various strategies to reduce transportation emissions, including providing transit services, transportation system management (TSM), transportation demand management (TDM), and pedestrian and bicycle programs. Still, vehicular emissions remain a significant contributor to overall air quality issues, air toxins, and greenhouse gas emissions, and continue to concern regulatory agencies and the general public.

3.3.2.B Fairfax County Multimodal Transportation Initiatives

Fairfax County’s transportation network connects its communities internally and regionally through an extensive system of roads and highways, bus and Metro routes, bike lanes, trails, and sidewalks. The county is committed to mitigating the negative environmental effects of its transportation network.



Wiehle-Reston East Metro Station

The Fairfax County Department of Transportation (FCDOT) oversees several initiatives supporting mass transit and alternative transportation modes in Fairfax County.

Fairfax Connector – FCDOT operates the Fairfax Connector Bus system, which transports 30,000 passengers per day on 91 local and express routes. The system provides access between many destinations within Fairfax County, as well as access to Metrorail for regional trips. Since the 2018-2019 school year, Fairfax Connector has operated a Free Student Bus Pass Program allowing middle and high school students to ride for free. Also since the 2018-2019 school year, Fairfax County and the Washington Metropolitan Area Transit Authority have offered free trips on certain Metrobus routes for Justice High School students to provide bus access in the area of the county where Fairfax Connector does not currently provide coverage. In 2021, FCDOT received grant funding allowing it to purchase eight electric transit buses and associated charging infrastructure; these buses are expected to be in service by mid-2022. The procurement



Fairfax Connector Bus

of additional electric Fairfax Connector buses in future years is expected to meet the fleet electrification goals and targets included in the 2021 update to the Fairfax County Operational Energy Strategy (see Section 2.2.4 for more information), More information on Fairfax Connector and the Free Student Bus Pass Program is available at: www.fairfaxcounty.gov/connector/.

Bicycle Program – Fairfax County has 130 miles of bike lanes and 500 miles of bikeable trail. The County’s Bicycle Master Plan and Countywide Trails Plan are being implemented in partnership with the Virginia Department of Transportation (VDOT), Fairfax County Park Authority (FCPA), and private developers through the Northern Virginia Paving Program striping, road improvement projects, property development, and as standalone capital projects. Fairfax County also promotes bicycling through Safe Routes to School educational programming, and through events like Bike to Work Day, Bike to Market Days, Bike & Walk to Worship Week, Bike Your Park Day and Bike to School Day. More information on the Bicycle Program is available at: www.fairfaxcounty.gov/transportation/bike-walk.

Capital Bikeshare – In October 2016, the Capital Bikeshare system launched in Fairfax County with 17 stations in Reston and Tysons. The number of stations in the county has increased to 35, expanding to locations in Merrifield and West Falls Church. FCDOT has secured funding for an additional 29 stations, which will be installed at locations in Reston and in the Vienna/Merrifield area.

Fairfax County Commuter Services (FCCS) – FCCS promotes alternative commuting options and strategies to reduce single-occupant vehicle (SOV) travel and corresponding greenhouse gas emissions through outreach and marketing to employers, residential communities, and individual commuters. Strategies promoted and services offered by FCCS include comprehensive and customizable assistance to employers and large residential communities to

establish commuter programs and ride-matching services through a regional database; the promotion of park-and-ride facilities with HOV/HOT lane access; employer assistance in establishing telework and commuter incentive programs; and support for recognition programs for Commuter Friendly Communities and Best Workplaces for Commuters. Throughout the COVID-19 pandemic, FCCS has provided resources to commuters and employers on how to get to and from work safely and efficiently. Fairfax County also has a Commuter Benefits Program for county employees. More information on Commuter Services is available at: www.fairfaxcounty.gov/transportation/commuter-services.

3.4 Water

Protecting the Potomac and Occoquan Rivers as sources for public drinking water, recreation and habitat for fish, shellfish and wildlife is a legal requirement. The Federal Water Pollution Control Act of 1948 was the first law to address water pollution. Increased awareness led to amendments to the law in 1972, which became known as the Clean Water Act (CWA). The CWA was significantly amended in 1977 and again in 1987.

The county and the state are required by the CWA to meet certain water quality standards for all contaminants in surface waters. The Act, and its subsequent amendments, established:

- Authority for the Environmental Protection Agency (EPA) to implement pollution control programs, such as watershed “pollution diets,” like the Chesapeake Bay Total Maximum Daily Load (TMDL).
- A structure for regulating pollutant discharges through permits.
- Water quality standards for surface waters.

In 1974 Congress passed the Safe Drinking Water Act, which regulates public drinking water supplies and requires actions be taken to protect drinking water and its sources. The law has been amended twice – once in 1986 and again in 1996.

The Clean Water Act and the Safe Drinking Water Act have been generally successful in controlling pollution and in protecting public water supplies. However, in recent years an increase of sodium and chloride concentrations in streams has been observed. Fairfax County staff has been actively participating in the Virginia Department of Environmental Quality’s (VDEQ) Salt Management Strategy (SaMS) for Northern Virginia. Active participation and utilization of the tools resulting from the effort will provide strategies to help reverse the increasing salt trends observed in county streams and help protect the Potomac and Occoquan Rivers.

3.4.1 Stormwater

Fairfax County has made significant investments in stormwater management and water pollution control mechanisms. The county is proactive in reducing the negative effects of stormwater runoff and preventing water pollution. For more information on stormwater management funding, see Section 2.4.



*Government Center Stream
Restoration Before and After*

Watershed Management

Planning – The Board of Supervisors has adopted watershed management plans covering all 30 watersheds in the county. Each plan assesses watershed conditions, recommends protection strategies and prioritizes improvement projects. Watershed management plans can be found online at www.fairfaxcounty.gov/publicworks/stormwater/watersheds.

Stormwater Capital Projects – The county and its partners continue to implement stormwater management-related capital projects, including flood mitigation projects and stream restorations.

Operations – Stormwater facilities and drainage infrastructure are operated consistent with the requirements of their Municipal Separate Storm Sewer System (MS4) permits, which regulate stormwater pollution. Inspections are conducted on both public and private stormwater facilities to keep them maintained and functioning. Industrial and commercial facilities are also inspected if they have the potential to discharge significant pollutant loads to county streams.

Monitoring and Assessment – The county conducts water quality monitoring in its streams, which includes physical habitat evaluations and biological assessments of fish and benthic macroinvertebrates.

Operation Stream Shield – In 2019, DPWES and the Office to Prevent and End Homelessness (OPEH) partnered to form the Operation Stream Shield (OSS) program, which provides part-time, temporary work experience for individuals experiencing homelessness. Through OSS, guests in local shelters are offered a stipend and the opportunity to develop workforce skills by helping the county remove litter and non-native invasive plants from local streams.

Public Outreach and Education – The county’s stormwater public education, outreach and stewardship efforts are described in Sections 3.8.1 and 3.8.2.

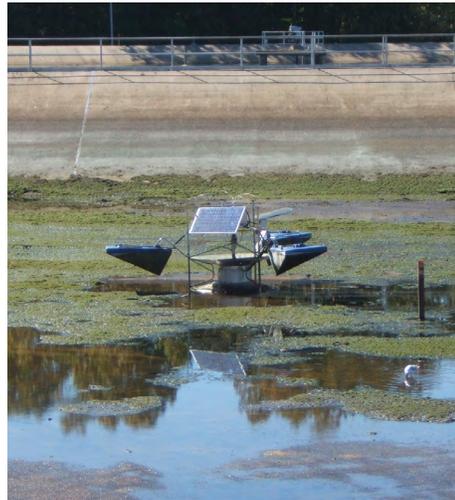
Stormwater Management Status Reports are available at www.fairfaxcounty.gov/publicworks/stormwater/stormwater-management-status-reports.

3.4.2 Wastewater

The Wastewater Management Program (WWMP) provides wholesale sewer service to county residents and several towns and cities in the region.

The county’s wastewater system has been featured on the EPA website for innovative use of capacity, management, operation and maintenance techniques; system rehabilitation; and diagnostic methods for minimizing sanitary sewer overflows. Plant upgrades resulted in nitrogen discharge loads that are consistently below permitted limits.

Operations – The WWMP includes approximately 3,400 miles of sewer lines, 63 sewage pumping stations, 280 sewage grinder pumps and 53 flow metering stations. Approximately 100 million gallons of wastewater are generated, collected and treated daily at the Noman M. Cole, Jr. Pollution Control Plant and at five regional treatment facilities.



*Solar mixer at Noman M. Cole, Jr.
Pollution Control Plant*

Public Outreach – Wastewater Management employees develop and implement targeted outreach events and educational programs. Targeted outreach includes community events designed to educate the public about the proper disposal of so-called flushable wipes, medications, and fats, oil and grease (FOG). One such educational program, the Sewer Science program, is a hands-on classroom learning experience that teaches students about wastewater treatment

in a laboratory setting. The Sewer Science program meets the requirements of the Virginia Standards of Learning. For more information visit www.fairfaxcounty.gov/publicworks/wastewater/sewer-science-program.

The WWMP achieved the highest level of certification in the Extraordinary Environmental Enterprise (E4) program, which is the highest level of certification in the Virginia Environmental Excellence Program. The program promotes the development of environmental management systems and pollution prevention programs by Virginia businesses and local and state government agencies.

3.4.3 Water Supply Planning

Virginia experienced serious droughts in 1999 and 2002. Largely as a result of these droughts, in November 2005, the State Water Control Board (SWCB), a regulatory board comprised of citizen-appointees, enacted regulations requiring that all local governments develop local or regional water supply plans, using criteria developed by the SWCB.

The purposes of these regulations, codified at 9 Virginia Administrative Code (VAC) 25-780, Local and Regional Water Supply Planning, are to: (1) ensure that adequate and safe drinking water is available to all citizens of the Commonwealth; (2) encourage, promote and protect all other beneficial uses of the Commonwealth's water resources; and (3) encourage, promote and develop incentives for alternative water sources, including but not limited to desalinization. Localities are required to submit their Water Supply Plans (WSPs) to the Virginia Department of Environmental Quality (VDEQ), which administers regulations enacted by the SWCB.

Fairfax County has participated in the development of a regional water supply plan (WSP) encompassing 22 Northern Virginia jurisdictions. In 2007, these jurisdictions designated the Northern Virginia Regional Commission (NVRC) as the lead agency responsible for developing the initial Northern Virginia WSP. Fairfax Water (www.fairfaxwater.org), which provides water service to nearly two million people in the Northern Virginia counties of Fairfax, Loudoun and Prince William, the cities of Fairfax, Falls Church and Alexandria, and the towns of Vienna and Herndon, served as the county's designated agent in the WSP development process.

The Northern Virginia WSP includes numerous elements, such as: descriptions of existing water uses, sources and resource conditions; an assessment of projected water demand; water management actions that address water conservation; and an evaluation of alternative water sources to address projected deficits in water supplies.

WSPs must be reviewed, revised if necessary, and resubmitted to VDEQ every ten years from the date of last approval. The SWCB also conducts an intermediate five-year review to assess the adequacy of the WSP to meet water demands. A revised WSP must be submitted within five years if the circumstances have changed significantly or new information renders a WSP inadequate. The Northern Virginia WSP five-year review process was completed in December 2018 and the WSP was deemed fully compliant by VDEQ. The next WSP submission is required by December 2023.

The planning horizon for the current Northern Virginia's WSP extends to the year 2040. The WSP assessment indicates that new sources of supply are needed in the 2035-2040 timeframe in order to avoid emergency restrictions and potential water shortages.

Fairfax Water has planned proactively to meet future water supply demands. In June 2015, the Fairfax County Board of Supervisors and Fairfax County Board of Zoning Appeals approved a series of zoning applications from Fairfax Water and Vulcan Construction Materials that will provide for a two-phase conversion of a quarry into a water supply storage facility. This effort has been designed to address the need for new water supply sources in the 2035-2040 timeframe and ultimately into the next century.

The county also has adopted regulations restricting water use during drought and emergencies. These regulations, located in Chapter 113 (Water Use, Emergency Regulations) of the County Code, satisfy state requirements for drought response and contingency plans.

More information regarding the Northern Virginia WSP is available at www.novaregion.org/1214/Northern-Virginia-Water-Supply-Plan.

3.5 Solid Waste Management

The Solid Waste Management Program (SWMP) is responsible for providing trash and recycling services in an efficient and cost-effective manner while complying with federal and state environmental regulations. Approximately 90 percent of the municipal solid waste (MSW) generated in Fairfax County is managed by private-sector collection, recycling, and disposal companies. One of the largest challenges facing the community is the closure of the privately-operated Lorton Construction Landfill in August 2018. The landfill managed almost half of the construction and demolition debris generated in Fairfax County, along with components that would be considered MSW, such as cardboard and wood. The facility included processing capacity to recover and recycle construction wastes in a manner certifiable for LEED development standards. As a result of the closure, it is anticipated that these wastes will have to travel farther to reach a recycling or final disposal site, which may in turn decrease the amount of material being recycled.

3.5.1 Recycling

In 1990, the SWMP established residential curbside recycling collection services for customers and required private haulers to provide recycling services to all of their residential and business customers. Since 2015, the county has reported a recycling rate of approximately 50 percent. In addition to curbside recycling, the SWMP has established a number of related recycling and waste disposal programs for county residents and businesses:

- Two permanent collection sites for household hazardous waste (HHW).
- Two permanent collection sites for recycling, including equipment to recycle glass.

- E-waste recycling at two permanent Recycling and Disposal Centers. See www.fairfaxcounty.gov/publicworks/recycling-trash/electronics.

While the SWMP does not directly provide specialty disposal and recycling services to the commercial sector, it hosts Conditionally Exempt Small Quantity Generator (CESQG) events to offer businesses that produce small quantities of hazardous waste a low-cost solution for disposal. The SWMP also creates and distributes toolkits that provide information on source reduction and recycling for use by property managers and the hospitality industry.



E-Waste Recycling

Until recently, approximately one-third of U.S. recyclables were exported to China. However, beginning in 2017, China began enforcing a series of progressively tougher import restrictions that raised the quality standard required for imported recyclables culminating in a 2019 ban on many such imports. The loss of demand from China created a glut in the global market for post-consumer recyclables, causing prices to collapse. In the face of greatly diminished revenues from recovered recyclables, the SWMP began educating residents against the “wishful recycling” of non-recyclable materials. Keeping non-recyclable materials out of the curbside bin and recycling stream reduces costs by avoiding both contamination of the recycling stream and the cost of collecting and processing materials that ultimately will need to be shipped to a landfill for disposal.

More information about the SWMP recycling programs is available at www.fairfaxcounty.gov/publicworks/recycling-and-trash.

3.5.2 SWMP Green Initiatives

In addition to offering environmentally responsible recycling and waste disposal options to residents, the SWMP strives to maintain environmentally responsible operations. These operations include:

Waste-to-Energy – Solid waste disposal is provided by a privately owned and operated waste-to-energy facility, under contract to Fairfax County. The facility

processes about 3,000 tons of solid waste per day. The facility's pollution control system removes roughly 98 percent of regulated air pollutants generated by the plant. See www.fairfaxcounty.gov/publicworks/recycling-trash/energy-resource-recovery-facility.

Landfill Gas – SWMP hosts two landfill gas-to-energy (LFGTE) systems. They support beneficial use of landfill gas as an alternative to natural gas and other fossil fuels.



*Covanta Fairfax
Waste-to-Energy Plant*

Wastewater Reuse – The SWMP partnered with the county's Wastewater Management Program to develop a wastewater reuse project. Daily, about 1.3 million gallons of treated but non-potable water is pumped from the wastewater treatment plant to the waste-to-energy facility, where it is used as cooling water.

Glass Recycling – In response to operational and economic challenges associated with glass recycling, the SWMP invested in a large-scale glass crushing and screening operation that converts source-separated glass from



*Glass recycling
drop-off container*

drop-off sites into sand and gravel that can be used in a wide variety of civil engineering and other technical applications (e.g., road building, pipe laying, drainage features). As the Fairfax project evolved, the

City of Alexandria and Arlington County joined with the county in establishing a regional program to encourage the public's use of designated purple drop-off dumpsters for the disposal of waste glass. The "Purple Can Club" has since expanded to Loudoun, Prince William and Stafford Counties, and the cities of Falls Church, Fairfax and Fredericksburg. Over 40 drop-off locations are located throughout the region. Since the program began in April 2019, over 25 million pounds of glass have been collected for recycling in the region.

Composting – In November 2020, SWMP launched a composting pilot program, opening two food scrap drop-off locations at the I-66 Transfer Station and I-95 Landfill. Fairfax County partners with a local private company that collects the scraps for composting. The compost is then used for agricultural

purposes or distributed back to residents to use for fertilizer, ultimately diverting residential food scraps from the solid waste stream. In June 2021, the pilot program was extended to four local farmers markets. Residents are able to drop-off their food scraps at these sites during regular market hours.

Other Sustainability Initiatives – In 2011, the I-66 Transfer Station workers’ facility was designed and built as a LEED Silver facility. At the I-95 Landfill Complex, the SWMP is exploring the development of additional renewable power generating capacity. Also, the SWMP has partnered with George Mason University on a project to assist in honey bee habitat sustainability. To date, 24 hives have been established at the I-95 Landfill site through George Mason’s Honey Bee Initiative program.

Additional information about some of these SWMP green initiatives can be found in Section 4.6.

3.6 Parks and Ecological Resources

Almost 20 percent of the county is owned as open space by government and partnering organizations. The vast majority of this open space hosts ecological resources and natural capital that benefits county residents.

3.6.1 Open Space in Fairfax County

Fairfax County contains approximately 50,000 acres of open space owned by local, state and federal agencies and organizations. (This number does not include unknown but substantial acreage under special tax district, rural or low-density residential areas or lands owned by civic associations within subdivisions.)

Almost half of the open space in the county — over 23,000 acres — is owned by the Fairfax County Park Authority (FCPA). The Board of Supervisors created FCPA in December 1950 and authorized it to make decisions concerning



Riverbend Park

land acquisition, park development and park operations in the county. Today, FCPA manages and operates 429 parks. In addition to its role in providing recreational facilities and services, FCPA is the primary public mechanism for preserving environmentally sensitive land and resources and areas of historic significance in Fairfax County. More information about FCPA is available at www.fairfaxcounty.gov/parks/.

Listed below are other owners of substantial open space in the county, including state and federal agencies and organizations.

Northern Virginia Regional Park Authority/NOVA Parks (NVRPA) – NVRPA was established in 1959 to protect natural resources from the threat of urban sprawl and to provide recreational amenities. NOVA Parks owns, leases and holds easements on 8,591 acres in Fairfax County, primarily along the Bull Run-Occoquan River Corridor and Reservoir, the Potomac River and on Pohick Bay on Mason Neck. See www.novaparks.com/.

Reston Association (RA) – Reston was founded as Virginia's first planned residential community in the mid-1960s. RA owns over 1,350 acres of open space. Its holdings include 55 miles of paved and natural surface trails, more than 700 acres of forest, 50 meadows and numerous water resources including four lakes and 20 miles of stream. See www.reston.org.

U.S. Department of Defense – Fort Belvoir is a strategic sustaining base for the U.S. Army that houses numerous agencies providing logistical, intelligence and administrative support. The county considers about 4,990 of Fort Belvoir's 8,500 acres to be open space. See <https://home.army.mil/belvoir>.

U.S. Department of Interior, Bureau of Land Management (BLM) – In October 2001, BLM exchanged a portion of the former Lorton Prison property with Fairfax County to acquire, in return, the 800-acre Meadowood Special Recreation Management Area. The acquisition was intended to preserve open space on Mason Neck and provide wildlife habitat, recreation and environmental education. See www.blm.gov/visit/meadowood-special-recreation-management-area.

U.S. Department of the Interior, Fish and Wildlife Service – The 2,277-acre Elizabeth Hartwell Mason Neck National Wildlife Refuge, located on Mason Neck, is the oldest and largest refuge within the Potomac River refuge complex. Established in 1969 under the Endangered Species Act, its focus is on forest, marsh and riverine habitat important to the bald eagle. See www.fws.gov/refuge/mason_neck/.

U.S. Department of the Interior, National Park Service – George Washington Memorial Parkway is a 7,600-acre national park protecting the landscape, historic sites and native habitat along the Potomac River shoreline. See www.nps.gov/gwmp/index.htm.

Virginia Department of Conservation and Recreation – Mason Neck State Park is comprised of 1,825 acres within the Elizabeth Hartwell Mason Neck National Wildlife Refuge that include wetlands, forest, open water, ponds and open fields. See www.dcr.virginia.gov/state-parks/mason-neck#general_information.

Additionally, certain organizations work to preserve open space through the negotiation and acquisition of conservation easements. A conservation easement typically restricts an owner’s rights to subdivide or develop his or her property, to remove trees or to excavate or fill the property.



*Egret at Huntley
Meadows Park*

One such organization active in Fairfax County is the Northern Virginia Conservation Trust (NVCT). NVCT, which was founded in 1994, helps local governments and private landowners voluntarily preserve natural areas, trails, streams and parks. NVCT has helped preserve over 690 acres in Fairfax County. See www.nvct.org/.

3.6.2 Natural Resource Management

Until a few decades ago, land management consisted of benign neglect, with areas left alone under the assumption that they were self-sustaining. Land management professionals now understand that there are tremendous pressures on remaining natural areas, that their conditions are declining, and that active management is necessary to restore their health.

Today, natural resources are considered natural capital. This capital consists of various elements: living organisms; non-living components such as air, water and soil; the ecosystems they form; and the environmental services they provide, including cleaning air and water, supporting wildlife and contributing to

the quality of life. Natural capital is not self-sustaining; instead, deliberate care and investment are required to enhance, protect and preserve it.

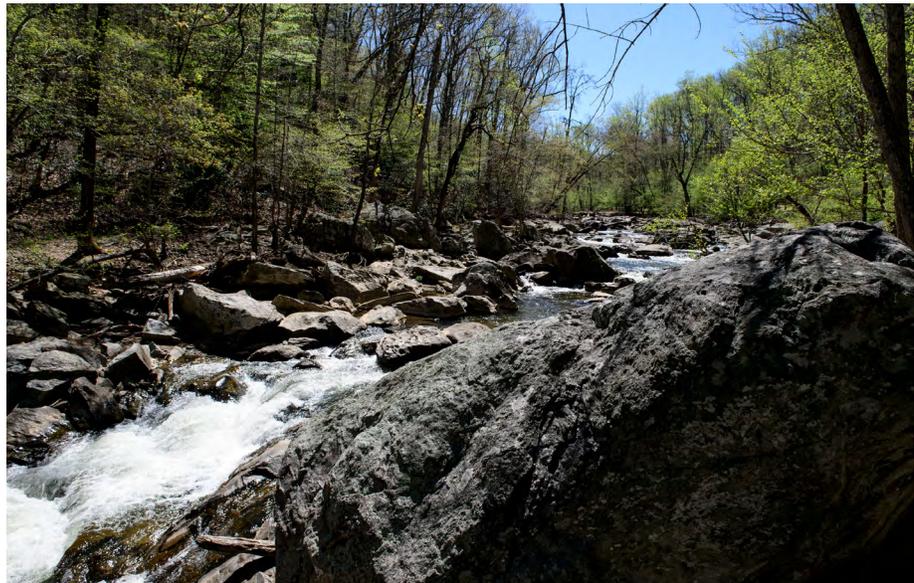
Agencies that manage natural resources in Fairfax County include FCPA, Urban Forest Management and Stormwater Divisions of the Department of Public Works and Environmental Services, the Police Department and the Northern Virginia Soil and Water Conservation District. Additionally, the county has engaged many partners, including nonprofit organizations such as the Audubon Society of Northern Virginia, Earth Sangha, Fairfax ReLeaf, the Fairfax Chapter of Virginia Master Naturalists, the Virginia Native Plant Society and organized Friends Groups.

Examples of the county's natural resource/capital management programs include:

- Fairfax County Watershed Planning and Watershed Plan Implementation (www.fairfaxcounty.gov/publicworks/stormwater/watersheds).
- Fairfax County Park Authority Natural Resource Management Plan Implementation (www.fairfaxcounty.gov/parks/nature/natural-resource-management-plan).
- Fairfax County Deer Management Program (www.fairfaxcounty.gov/wildlife/deer-management-program).
- Fairfax County Geese Management Program (www.fairfaxcounty.gov/wildlife/geese-management-program).

3.6.3 Policy and Regulatory Mechanisms for Protecting Natural Resources

Section 2 describes the regulatory, policy and strategic framework of the county's environmental programs, including a brief introduction to the county's Comprehensive Plan and environmental ordinances. Section 3.6.3 discusses



Difficult Run

four county regulations that play a key role in the protection of natural resources: the Chesapeake Bay Preservation Ordinance, the Stormwater Management Ordinance, the Floodplain Regulations of the county's Zoning Ordinance and the Wetlands Zoning Ordinance. This section also discusses the Environmental Quality Corridor policy in the Comprehensive Plan, which plays a significant role in protecting natural resources.

3.6.3.A Chesapeake Bay Preservation Ordinance

All of Fairfax County drains into the Potomac River and ultimately the Chesapeake Bay. As a result, land use and development activities in the county can adversely impact the water quality of both county streams and downstream resources.

In 1988, the Commonwealth of Virginia enacted the Chesapeake Bay Preservation Act, which required 84 localities in Virginia, including Fairfax County, to institute water quality protection measures to improve the declining health of the Chesapeake Bay and its tributaries.

The county adopted the Chesapeake Bay Preservation Ordinance in 1993 to protect both local streams and the Chesapeake Bay from pollution due to land use and development in the county. The ordinance was substantially revised in 2003 and 2014.

Through the Chesapeake Bay Preservation Ordinance, sensitive areas along streams, rivers and other waterways throughout the county are designated as Resource Protection Areas (RPAs). With some exemptions and exceptions, most land disturbance within RPAs is prohibited. Other areas of the county that are not in RPAs have been designated as Resource Management Areas (RMAs). RMAs are comprised of lands that, if improperly used or developed, have the potential to significantly harm water quality or diminish the functional value of the RPA. Collectively, RPAs and RMAs are known as Chesapeake Bay Preservation Areas.

More information about the Chesapeake Bay Preservation Ordinance, including maps and FAQs, is available at www.fairfaxcounty.gov/landdevelopment/chesapeake-bay-preservation-ordinance.

3.6.3.B Stormwater Management Ordinance

In 2014, the County adopted the Stormwater Management Ordinance to implement changes to the Virginia Stormwater Management Act and Regulations. By establishing requirements for stormwater management and procedures whereby those requirements are administered and enforced, the Stormwater Management Ordinance ensures the general health, safety, and welfare of the citizens of Fairfax County and protects properties, state waters, stream channels, and other natural resources from the potential harm of both illicit discharges of pollutants and unmanaged stormwater.

More information about the Stormwater Management Ordinance is available at: www.fairfaxcounty.gov/landdevelopment/stormwater-management-ordinance.

3.6.3.C Floodplain Regulation

A floodplain is the flat area located adjacent to a stream channel that is prone to flooding. When stream banks overflow during or after a storm, the floodplain provides natural storage for the excess water. In Fairfax County, the 100-year frequency storm is used to determine the limits of the floodplain.

The Floodplain Regulations of the Zoning Ordinance establish two types of regulated floodplain areas:

- The “Minor Floodplain,” associated with streams with drainage areas between 70 and 360 acres.
- The “Major Floodplain,” associated with streams with drainage areas equal to or greater than 360 acres.

The Floodplain Regulations serve a number of purposes. They are intended to protect against loss of life, health or property from flood or other dangers. They are also intended to preserve and protect floodplains in as natural a state as possible, thereby (1) preserving wildlife habitats; (2) maintaining the natural integrity and function of the streams; (3) protecting water quality; and (4) promoting a zone for ground water recharge.

A limited number of uses are permitted in floodplains, although additional uses can be approved by the Board of Supervisors through a special exception. All floodplain uses are subject to a series of limitations that serve to protect public safety and minimize adverse environmental impacts associated with these uses.

Floodplain Regulations are addressed in Section 5105 of Article 5 of the Zoning Ordinance, available at <https://online.encodeplus.com/regs/fairfaxcounty-va/doc-viewer.aspx?tocid=001#secid-214>.

3.6.3.D Wetlands Zoning Ordinance

The Virginia Tidal Wetlands Act, adopted by the General Assembly in 1972, states the following:

Therefore, in order to protect the public interest, promote the public health, safety and the economic and general welfare of the Commonwealth, and to protect public and private property, wildlife, marine fisheries and the natural environment, it is declared to be the public policy of this Commonwealth to preserve the wetlands, and to prevent their despoliation and destruction and to accommodate necessary economic development in a manner consistent with wetlands preservation.

In the 45 years since the Act was adopted by the General Assembly, the Commonwealth has improved, modified and fine-tuned the program to keep up with advances in wetlands science.

Fairfax County takes great pride in its tidal shoreline. According to the Center for Coastal Resources Management at the Virginia Institute of Marine Science, the county contains 112 linear miles of tidal shoreline. The shoreline traverses south along the Potomac River from Cameron Run to the Occoquan Reservoir, where the tidal influence terminates at the Occoquan Dam. The county views tidal wetlands as valuable natural resources that help to prevent flooding, improve water quality and provide habitat. The Wetlands Zoning Ordinance was adopted in recognition of the environmental functions provided by tidal wetlands and the need to ensure that development activities in tidal areas occur in a manner that minimizes adverse impacts to these wetlands. More information is available at www.fairfaxcounty.gov/plan2build/tidal-wetlands-and-shorelines.

Current wetland science promotes natural shoreline stabilization (living shoreline treatment) where the conditions are appropriate. In support of living shoreline stabilization, the Fairfax County Wetlands Board adopted a “Living Shoreline” Policy in 2007. The policy is available at www.fairfaxcounty.gov/landdevelopment/sites/landdevelopment/files/assets/documents/pdf/finallivingshorelinepolicy.pdf.

In 2015, the Virginia Marine Resources Commission finalized permitting regulations to support the use of living shoreline as the preferred alternative to stabilizing tidal shorelines. The Living Shoreline General Permit can be found at mrc.virginia.gov/Regulations/fr1300.shtm or www.mrc.virginia.gov/Regulations/MRC_Scanned_Regs/Habitat/fr1330_11-01-17.pdf.

The Board of Supervisors has advocated that staff make information readily available to homeowners about the regulations for tidal shoreline property that protect against negative impacts to the environment. In support of this goal, staff developed an information sheet for owners of tidal shoreline properties. Before making changes to a waterfront property or undertaking land-disturbing activities, a property owner may need to obtain a permit from the Wetlands Board and other agencies. An information brochure is available at www.fairfaxcounty.gov/plan2build/sites/plan2build/files/assets/documents/pdf/tidal-shoreline-mailing-brochure.pdf. Additional information is available at www.fairfaxcounty.gov/plan2build/tidal-wetlands-and-shorelines/how-do-i-apply-wetlands-permit.

The Wetlands Board requires mitigation or compensation for unavoidable tidal wetlands loss, as explained in its policy, available at www.fairfaxcounty.gov/landdevelopment/sites/landdevelopment/files/assets/documents/pdf/finallivingshorelinepolicy.pdf.

3.6.3.E Comprehensive Plan Policy

The Environment section of the Policy Plan volume of the Comprehensive Plan provides broad environmental policy guidance that is applied during the zoning process. The Environment section includes numerous policies, including those recommending the identification, protection and restoration of Environmental Quality Corridors (EQCs) and streams and buffer areas upstream of EQCs.

The EQC system is an open space system in Fairfax County designed to preserve, restore and link natural resource areas. The core of this system is the county's streams. The EQC policy recommends protection and restoration of environmentally-sensitive lands, including a number of features near streams (steep slopes in stream valleys, wetlands connected to stream valleys and 100-year floodplains). The policy also recommends protection and restoration of upland habitats that augment the habitats and buffers provided by stream valleys. The EQC policy has been refined since its initial adoption in 1975, but it continues to be a centerpiece of Fairfax County's environmental policy.

The Department of Planning and Development, which negotiates zoning commitments made by developers, estimates that EQC commitments have protected thousands of acres of land that would not otherwise have been

protected through regulation. Flexible zoning provisions often allow developers to concentrate densities/intensities on the less-sensitive portions of their sites, thereby achieving both desired levels of development and the protection of EQCs and other open spaces.



The EQC policy is found in Objective 9 of the Environment section of the Policy Plan, available at www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/compplan/policy/environment.pdf.

3.6.4 Trees and Tree Conservation

Trees are critical to enhancing the livability and sustainability of the county.

Management of the urban forest to maximize the benefits trees provide is an essential step in reaching the goals of the Environmental Vision, the Tree Action Plan, community-wide greenhouse gas emissions reduction goals and other public health initiatives and programs. The value of trees to human physical and mental well-being is well documented. Trees build a sense of community and enhance economic development.

A December 2017 study using the i-Tree Ecosystem Analysis, a model developed by the U.S. Forest Service, assessed the structure, function and value of the urban forest. According to the assessment, there are more than 44 million trees that provide significant environmental, economic and social benefits in Fairfax County.

Each year, the urban forest removes 4,538 tons of air pollutants and stores more than 7.5 million tons of carbon dioxide. Additional economic benefits include residential energy savings of approximately \$34 million annually, through the natural shading, cooling and wind blocking services that trees provide.

The i-Tree Ecosystem Analysis is available at www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/ffcounty_ecoreport.pdf.

An Urban Tree Canopy Analysis conducted by the University of Vermont and published in March 2017 indicated that the county's tree canopy has increased by one percent in five years. This is the first time the county has had comparable, high-resolution imagery to monitor land use changes over time. The report is available at www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/tree-canopy-report-2015.pdf.

3.6.4.A Urban Forest Management

The Urban Forest Management Division (UFMD) of the Department of Public Works and Environmental Services is the primary county agency responsible for managing trees and forests in Fairfax County. UFMD coordinates and implements the county's efforts to manage our urban forest resources, including advancing the Environmental Vision to:

- Improve energy conservation, air quality, water quality and stormwater management.
- Increase tree conservation in land development.
- Incorporate tree planting and tree preservation in stormwater management policies and practices to help meet water quality regulatory requirements.
- Achieve climate and energy benefits by implementing policies and practices to increase tree canopy.
- Preserve, protect, maintain, enhance and restore healthy native trees, forests, waterbodies, and ecosystems to promote natural capital, ecological services, and green infrastructure.
- Foster an appreciation for the urban forest and inspire county residents to protect, plant and manage trees and forest stands on public and private lands.
- Draw on science, education and strong partnerships to achieve a healthy urban forest.

UFMD's key responsibilities and activities include:

- Implementing the Tree Action Plan. See www.fairfaxcounty.gov/publicworks/tree-action-plan.
- Conducting vegetation mapping and surveys.
- Developing ordinances and policies for tree preservation.
- Providing public education and outreach at a range of venues.
- Partnering with others in support of the county's tree planting and conservation efforts.
- Providing assistance on tree and landscape requirements to residents, the development community and other county agencies throughout the land development process.
- Identifying, monitoring and providing limited suppression of forest insect pest infestations throughout the county. See www.fairfaxcounty.gov/publicworks/trees/forest-pests.

3.6.4.B Tree Action Plan

The Tree Action Plan is a multi-year strategy for conserving and managing tree resources. The Plan, first adopted in December 2006, and updated in 2019, was developed by Tree Commission members, with support from county staff and other stakeholders. The current plan reflects five goals: to know what we have, protect and improve what we have, expand what we have, improve Urban Forestry policies and processes, and communicate and build partnerships. To achieve these goals, the Tree Action Plan includes 24 core recommendations that specify what must be done to manage the urban forest.

The 2019 update to the Tree Action Plan includes an Urban Forest Strategic Plan, which details the benefits the urban forest contributes to the environment and quality of life, and describes human and environmental stressors to the urban forest that must be addressed. The 2019 update also includes an Urban Forest Management Plan, to address implementation and tracking. The 2019 update highlights the need for a “community of practice” to achieve the goals of the Tree Action Plan. The community of practice involves the Tree Commission; county agencies; public and private stakeholder organizations; businesses and other regional and state organizations; and citizens.

More information is available at www.fairfaxcounty.gov/publicworks/tree-action-plan.

3.7 Climate and Energy

The Environmental Vision commits the county to promoting and encouraging energy efficiency, conservation efforts and renewable energy initiatives

by residents and businesses. Supporting objectives in the Environmental Vision also call for the county to identify and address climate change impacts through adaptation and resilience planning. As outlined in this section, the county has developed several programs intended to both help the community reduce greenhouse gas (GHG) emissions, as well as respond to the impacts of climate change.

The county has demonstrated a commitment to achieve its own operational GHG emissions reductions through the Carbon Neutral Counties Declaration, signed in July 2021, and the July 2021 update to the Operational Energy Strategy. Both the Declaration and updated Operational Energy Strategy commit the county to energy carbon neutrality by 2040. The updated Operational Energy Strategy includes accelerated goals and targets across major focus areas, such as energy use and efficiency, green buildings, renewables, fleet electrification, and waste management and recycling, to help the county meet its carbon neutral goal.

While focused on county operations, the implementation of certain goals and targets in the Operational Energy Strategy will also benefit community members. For instance, the target to electrify county fleet vehicles by 2030 will result in the installation of electric vehicle charging infrastructure at government facilities, many of which will be available to the public. Overall, implementation of these goals and targets will result in reduced GHG emissions reductions, providing numerous social and economic benefits to county residents.

More information on the Carbon Neutral Counties Declaration and updated Operational Energy Strategy is provided in Sections 2 and 4. The Declaration is available at www.fairfaxcounty.gov/environment-energy-coordination/carbon-neutral-counties-declaration. The Energy Strategy is available at www.fairfaxcounty.gov/environment-energy-coordination/energy-strategy.

3.7.1 Climate Change Planning and Action

Fairfax County is proactively working to address climate change and its various impacts through two separate initiatives. The first, the Community-wide Energy and Climate Plan, addressed in Section 3.7.1.A, is focused on mitigation and reducing GHG emissions in the county. The second initiative, Resilient Fairfax, addressed in Section 3.7.1.B, focuses on climate adaptation and resilience, and ensuring that the Fairfax County community can better address the risks posed by climate change.

3.7.1.A Community-wide Energy and Climate Action Plan

The Community-wide Energy and Climate Action Plan (CECAP) is Fairfax County's first-ever GHG emissions reduction plan. The CECAP Final Report, which was accepted by the Board of Supervisors on September 14, 2021,

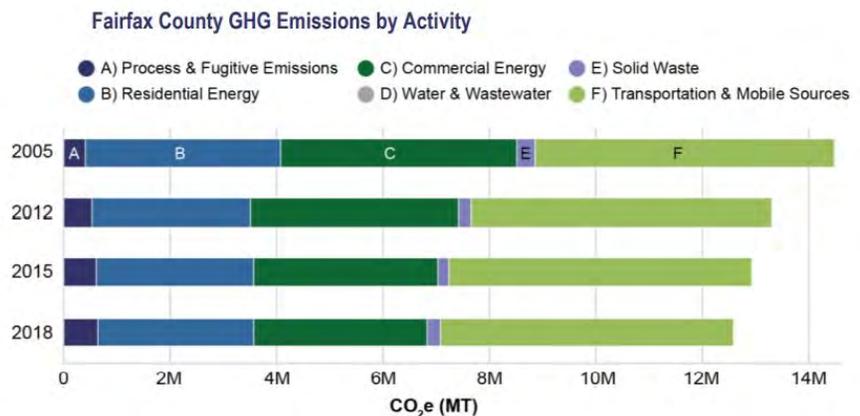
includes long-term and interim goals, 12 specific strategies and numerous actions that Fairfax County residents, businesses, organizations and other stakeholders can take to reduce their carbon footprints. Notably, the report includes an overarching goal adopted by the CECAP Working Group to achieve carbon neutrality by 2050 from a 2005 base year, with at least 87 percent coming from GHG emissions reductions, not offsets.

CECAP was developed in response to both a recommendation from the Environmental Quality Advisory Council (EQAC), as included in its 2018 Annual Report on the Environment, as well as the first Fairfax Green Initiatives Board Matter, introduced by Supervisors Storck, Foust, and (now Chairman) McKay in February 2019. Following Board approval of the CECAP development process in September 2019, the planning process began in earnest in January 2021. The process was overseen by the county’s Office of Environmental and Energy Coordination (OEEC), with support from COG and management consulting firm ICF.

As part of the CECAP planning process, the county commissioned COG to update Fairfax County’s community-wide GHG emissions inventory and to develop multiple scenarios to project emissions through 2030 and 2050, including a business-as-usual case. The county’s updated emissions inventory served as a key component of those scenarios, as it measures GHG emissions attributable to residents, businesses, industries and government agencies located in Fairfax County from sources including electricity and natural gas consumption in residential and commercial buildings, mobile transportation (including on-road vehicular traffic, air travel and off-road activities), collection and treatment of solid waste, pumping and treatment of water and wastewater, and hydrofluorocarbon release.

As reported by COG, over the 13-year period 2005-2018, Fairfax County reduced its per capita GHG emissions by 24 percent, from 14.5 metric tons of carbon dioxide equivalent (MT CO₂e) in 2005 to 11.0 MT CO₂e in 2018.

*Fairfax County Emissions
2005 – 2018 (COG)*



According to the inventory, in 2018, residential and commercial energy use accounted for 49 percent of GHG emissions, while transportation and mobile sources accounted for 44 percent. Also notable in the inventory is the fact that about 95 percent of GHG emissions in Fairfax County are attributable to the community; local government and school operations account for only about five percent of emissions.

As a majority of emissions are attributable to the community, the CECAP planning process was designed to be community driven. Between January 2020 and May 2021, CECAP goals, strategies and actions were considered and developed by the CECAP Working Group, an advisory body to the Board of Supervisors composed of representatives and experts from dozens of community groups, prominent local organizations and individuals from each of the Supervisor districts in Fairfax County. At several points throughout this time, members of the greater public were invited to provide feedback on CECAP goals, strategies and actions through public meetings and surveys.

With the acceptance of the CECAP Final Report in September 2021, the county begins moving into the implementation phase of CECAP. It will be working closely with the community to address the goals, strategies and actions included in the Final Report.

The CECAP Final Report, which includes more information about the planning process, GHG emissions inventory and scenarios, and CECAP goals, strategies and actions, may be found at <https://www.fairfaxcounty.gov/environment-energy-coordination/cecap>.

3.7.1.B Resilient Fairfax

Complementing CECAP is Resilient Fairfax, the county's first comprehensive Climate Adaptation and Resilience Plan. With the planning process underway, a final report, expected in mid-2022, will examine existing and projected climate risks and



Flood Damage in Fairfax County

vulnerabilities, and identify strategies to reduce these risks for county residents, businesses, infrastructure and local government. While CECAP addresses mitigation and reductions in the fossil fuel emissions that are the root cause of climate change, Resilient Fairfax addresses the impacts of climate change, which are already beginning to affect Fairfax County. Even with strong GHG

emission reduction measures in place, climate change will continue to impact this area for decades to come.

Resilient Fairfax is being developed in response to the February 2019 Fairfax Green Initiatives Board Matter, which called for the development of a county-specific Climate Adaptation and Resilience Plan. The initiative is overseen by the county's Office of Environmental and Energy Coordination with technical support from consultants. Following Board approval of the planning process in September 2020, this planning initiative began in earnest in February 2021. The final report of the Resilient Fairfax planning process will include the results of localized climate projections, an audit of the county's existing policies, programs and initiatives related to climate adaptation and resilience, a vulnerability and risk assessment, recommended adaptation and resilience strategies, and an implementation roadmap.

While community action is needed to reduce Fairfax County's GHG emissions, the general public has a more limited role to play in climate adaptation and resilience. Consequently, the planning process is structured differently from CECAP. Instead of a Working Group, Resilient Fairfax involves the participation of two advisory groups as well as two distinct county government teams. The role of each advisory group is similar – to review and provide feedback on components of the planning process – but their composition is different. The Infrastructure Advisory Group is composed of representatives of government, utilities and authorities, transit authorities and commissions, builders and developers, and other stakeholders who oversee vital infrastructure and services for the community. The Community Advisory Group includes representatives from the magisterial districts, local organizations, businesses, chambers, and educational institutions. Surveys and meetings, open to the general public, will round out input from the community on climate adaptation and resilience.

Given the large role local government will play in implementing climate adaptation and resilience strategies, particularly those pertaining to infrastructure and services overseen by Fairfax County, both a Planning Team and Steering Committee have been formed under the Resilient Fairfax planning initiative. The Planning Team is made up of various county agencies whose mission and work overlap with issues related to climate adaptation and resilience. This team is reviewing and providing input throughout the planning process on all deliverables. The Steering Committee adds an extra layer of review to components of the planning process from the executive level of county government.

Additional information on Resilient Fairfax may be found at www.fairfaxcounty.gov/environment-energy-coordination/resilient-fairfax.

3.7.2 Fairfax Green Initiatives

Board Matters introduced in February 2019 and July 2020 include several action items for county agencies, Board offices, and Boards, Authorities and Commissions related to energy and the environment. Implementation of these items is intended to further advance the county's commitment to environmental sustainability. These Board Matters are referred to as Fairfax Green Initiatives #1 and #2.

While several of the action items pertain to county operations, others promote climate and energy action in the community. Both CECAP and Resilient Fairfax were developed in response to Fairfax Green Initiatives. Other items pertain to incentivizing renewable energy and electric vehicle adoption in the community, incentivizing, and accelerating residential and commercial green building practices, and developing partnerships and funding opportunities for green jobs and other green initiatives.

Quarterly updates on the progress of Fairfax Green Initiatives are provided to the Board of Supervisors in memoranda and presented at the Board of Supervisors Environmental Committee.

Additional information on Fairfax Green Initiatives may be found at www.fairfaxcounty.gov/environment-energy-coordination/fairfax-green-initiatives.

3.8 Environmental Stewardship and Outreach

3.8.1 Education and Outreach

To fulfill the objectives of the Environmental Vision, and to involve the community in additional climate, energy and environmental initiatives, the county oversees a number of education and outreach opportunities across its various focus areas. The COVID-19 pandemic caused many of these programs to be reimaged for a virtual environment throughout FY 2022. In many cases, outreach programs had to be put on hold to meet state and federal health and safety guidelines. Despite these challenges, education and outreach remain an integral part of many of the county's environmental initiatives.

County staff reaches out to the public through meetings, seminars, festivals, special events, websites, and social media. Speakers from county agencies and partner organizations present to neighborhoods and community groups on a range of topics. For example:

- Master Gardener, Master Naturalist and Tree Steward courses educate and establish a volunteer base for environmental projects and programs.
- Green Breakfast presentations sponsored by the Northern Virginia Soil and Water Conservation District (NVSWCD) engage county residents six times a year on emerging and innovative green topics.

- Meetings of the Fairfax County Environmental Quality Advisory Council (www.fairfaxcounty.gov/planning-zoning/environmental-quality-advisory-council) and other boards and commissions are open to the public and offer opportunities to hear from speakers about environmental issues in the county.

Award ceremonies also create opportunities to increase environmental awareness. For example, each year the Board of Supervisors recognizes those who dedicate their time and energy to benefit the environment and support county environmental initiatives. Since 2000, over 70 Environmental Excellence Award winners have been selected. These awardees include individuals, organizations, businesses, and county employees. A list of award recipients is available at www.fairfaxcounty.gov/environment-energy-coordination/environmental-excellence-awards.

Residents of all ages can watch television programs with environmental themes produced by the county and broadcast on its Channel 16 station. Programs include *Live Energy Efficient Now*, *Stop Bagging our Streams*, and *What's in Your Water*. These and other programs are available on demand at www.fairfaxcounty.gov/cableconsumer/channel-16/video-on-demand. The county also promotes environmental awareness on social media, through Facebook, Twitter, Instagram, and Next Door accounts.

Highlighted below are education and outreach initiatives overseen by the Office of Environmental and Energy Coordination, the Fairfax County Park Authority and the Department of Public Works and Environmental Services.

3.8.1.A Energy Action Fairfax and HomeWise

Energy Action Fairfax is the county's energy education and outreach program, with initiatives for residents, businesses and employees. Energy Action Fairfax, housed within the Office of Environmental and Energy Coordination, offers a range of resources, including energy saving tips and videos, information about home energy assessments, and descriptions of program offerings and

special initiatives. Energy Action Fairfax also hosts community presentations, booths and tables, and "Home Performance Get Togethers" for community members upon request. In its Home Performance Get Togethers, Energy Action Fairfax provides free home energy assessments to homeowners who organize an educational



An LED lightbulb exchange hosted by Energy Action Fairfax

gathering and agree to share the assessment results with neighbors. Other initiatives that have been established or operate under the Energy Action Fairfax (EAF) program umbrella include:

- **Thermal Camera Loan Program:** Through this program, which was initiated in 2017, county residents can borrow a thermal camera just like a book from any branch of the Fairfax County Public Library. Thermal cameras enable residents to inspect their homes or businesses for hot and cold spots, which often indicate energy saving opportunities. The website, located at www.fairfaxcounty.gov/environment-energy-coordination/thermal-camera, provides camera instructions and weatherization project ideas.
- **LED Lightbulb Exchanges:** Prior to the COVID-19 pandemic, which impacted in-person outreach opportunities, Energy Action Fairfax hosted events each spring offering residents one free LED lightbulb and up to four more if they brought in incandescent lightbulbs or compact fluorescent lights (CFLs) to exchange. More information is available at www.fairfaxcounty.gov/environment-energy-coordination/led-exchange.
- **Solarize Fairfax County:** Each spring, Energy Action Fairfax coordinates a “Solarize Fairfax County” campaign in collaboration with the Northern Virginia Regional Commission and the Local Energy Alliance Program. The campaign helps residents and businesses reduce the cost and complexity of installing solar panels by providing free onsite solar assessments, a bulk purchase discount, access to vetted contractors and community workshops and support. In 2019, the Solarize program was extended to encompass electric vehicle (EV) charging stations, and in 2021 began offering battery storage at a discount. More information can be found at solarizenova.org/solarize-fairfax-county.
- **Green Business Partners:** This program recognizes local businesses that are leaders in environmental stewardship. The website’s Green Business Partners Directory provides a sustainability profile for each Partner highlighting its achievements. More information can be found at www.fairfaxcounty.gov/environment-energy-coordination/green-business.

In addition to overseeing Energy Action Fairfax, OEEC also oversees the county’s HomeWise program, which educates, empowers, and enables residents to make changes that reduce energy use, water use, and associated costs in their homes. HomeWise volunteers assist low- and moderate-income residents with physical improvements to their homes and provide support for behavior changes that are proven to conserve resources and money. Educational ambassadors connect with Fairfax County students and residents to raise awareness of personal actions that can save energy, water, and money.

More information about Energy Action Fairfax and HomeWise is available at www.fairfaxcounty.gov/environment-energy-coordination/energyactionfairfax and www.fairfaxcounty.gov/environment-energy-coordination/homewise.

3.8.1.B Fairfax County Park Authority

Environmental outreach is a natural fit for the Fairfax County Park Authority (FCPA), whose mission includes assisting citizens in the protection and enhancement of environmental values, diverse natural habitats and cultural heritage.

Fairfax County public and private school students can take a field trip to a Fairfax County park to experience an up-close look at county habitats and nature. FCPA naturalists will also visit schools to bring nature education to the students in an outreach program. Science and stewardship-related field trip programs are offered at 11 FCPA sites. For more information, visit www.fairfaxcounty.gov/parks/field-trips.

For older children and teens, educational programs sponsored by FCPA supplement the hands-on activities described above. For example, the county's Hidden Pond Nature Center and Park offers teens a chance to be on an Envirothon team. Envirothon is North America's largest high school environmental education competition. More information on the county's Envirothon program can be found at www.fairfaxcounty.gov/soil-water-conservation/envirothon.

Families can learn about stewardship and the environment through the hundreds of educational program offerings each year at FCPA's five nature centers, horticultural center, farm and three lake front parks. Programs range from educational campfires to birdwatching hikes and live animal programs. Listings for these programs are available at www.fairfaxcounty.gov/parks/parktakes/.

FCPA also offers programs for various scout groups like the Boy Scouts of America and Girl Scouts of America, as well as 4H, American Heritage Girls and other organizations. These programs focus on helping local scouts earn badges in nature and science. More details can be found at www.fairfaxcounty.gov/parks/scouts.

Stewardship Brochures published by FCPA address topics ranging from beavers to wildlife conflicts, while its Nature Pages help visitors explore the county's environmental and cultural resources. See www.fairfaxcounty.gov/parks/nature/stewardship-brochures.

3.8.1.C Department of Public Works and Environmental Services

The Department of Public Works and Environmental Services (DPWES) promotes environmental awareness through: public education campaigns; presentations on Slideshare, YouTube and other social media platforms; staff interviews with news media; articles in professional magazines; TV Channel 16 programs; events; public meetings and the county website.

The “Stormy the Raindrop” education campaign encourages children to appreciate and take better care of their environment. The campaign includes activity books, puppet shows and appearances at county events.

See www.fairfaxcounty.gov/publicworks/stormwater/stormy-raindrop.

The Solid Waste Management Program arranges tours of the county’s solid waste facilities and provides information, in a variety of formats, about recycling for businesses and residents.

3.8.2 Community Stewardship Opportunities

A variety of Fairfax County programs engage adults and youth in volunteer opportunities and other hands-on environmental stewardship activities. While the COVID-19 pandemic caused many of these opportunities to switch to a virtual format, or even be put on hold throughout much of FY 2022, the county’s community stewardship opportunities remain an integral part of its sustainability initiatives. Sections 3.8.2.A through 3.8.2.D highlight these environmental stewardship opportunities and activities across several areas.

3.8.2.A Watershed Volunteer Opportunities

- **Stream Monitoring** – Volunteers monitor local stream health four times each year. Training, equipment and certification are provided by the Northern Virginia Soil and Water Conservation District.
- **Storm Drain Marking** – The county’s network of storm drains directs stormwater to streams, not to wastewater treatment plants. As a result, substances dumped in the storm drains — from pet waste to trash — flow into county streams. To remind residents to protect the streams, program volunteers label storm drains with watershed-specific “no dumping” markers.
- **Stream Clean-ups** – Free supplies for litter cleanups in parks, streams and neighborhoods are provided through partnerships with community organizations including Clean Fairfax and the Alice Ferguson Foundation.
- **Tree Planting** – Fairfax County and partner organization Fairfax ReLeaf support volunteer tree plantings in the spring and fall on community properties, schoolyards and other sites.

More information about these and other watershed volunteer

opportunities is available at www.fairfaxcounty.gov/publicworks/stormwater/volunteer-opportunities-and-educational-programs.



Tree Planting Event – Fairfax County Government Center

3.8.2.B Volunteer Opportunities in County Parks

- **Invasive Management Area Program** – This Fairfax County Park Authority (FCPA) program recruits and trains volunteers to lead and participate in invasive plant removal in county parklands. See www.fairfaxcounty.gov/parks/invasive-management-area.
- **Trail Improvements** – FCPA has seven trail partner groups that have adopted sections of the Cross County Trail. Each group is responsible for oversight and routine maintenance of its individual section. Re-routings and other trail improvements are also coordinated through these groups. See www.fairfaxcounty.gov/parks/trails/cross-county-trail.
- **Park Volunteer Teams** – The Park Volunteer Team (PVT) Program is an option for individual volunteers interested in working as a team to provide recurring operational, programmatic, maintenance, and/or fundraising support for a FCPA site or program. See www.fairfaxcounty.gov/parks/park-volunteer-team.

More information about volunteer opportunities in county parks is available at www.fairfaxcounty.gov/parks/volunteer.

3.8.2.C Activities Offered by Northern Virginia Soil and Water Conservation District

- **Conservation Assistance Program** – The Northern Virginia Soil and Water Conservation District (NVSWCD) provides technical and financial assistance for the installation of rain gardens, conservation landscaping, dry well/infiltration trenches, porous pavement and more. See www.fairfaxcounty.gov/soil-water-conservation/conservation-assistance-programs.
- **Native Seedling Sale** – NVSWCD distributes low-cost native shrubs and trees to residents each spring for planting on private property. See www.fairfaxcounty.gov/soil-water-conservation/native-seedling-sale.



A rain barrel distributed through the Rain Barrel Program and decorated by a local artist

- **Sustainable Garden Tour** – Rain gardens, green roofs, porous pavers and other features are highlighted in this annual tour of innovative home, school and community gardens. See www.fairfaxcounty.gov/soil-water-conservation/sustainable-garden-tour.
- **Rain Barrel Program** – Participants build and take home low-cost rain barrels, which reduce runoff and allow residents to harvest rainwater for reuse. Since 2007, more than 3,000 barrels have been distributed. See www.fairfaxcounty.gov/soil-water-conservation/rain-barrel.

- **Build-Your-Own Composter** – Each workshop participant builds and takes home a low-cost tumbler-style composter built from a recycled pickle barrel, gas pipe and pre-cut 2x4s. See www.fairfaxcounty.gov/soil-water-conservation/build-your-own-tumbler-composter.
- **Youth Engagement and Investment Programs** – Every year, NVSWCD sponsors student participation in a Youth Conservation Camp at Virginia Tech, Young Conservation Leadership Scholarships, and in local, regional, and state Envirothon competitions. More information about all of these programs can be found at www.fairfaxcounty.gov/soil-water-conservation/.

3.8.2.D Additional Service Opportunities

County residents can also pursue service on one of the county’s many boards, authorities and commissions that address environmental issues (see Section 1.2.3). Residents interested in serving on a board, authority or commission should contact their Supervisors.

3.9 Environmental Health

The Division of Environmental Health (DEH), within the county’s Department of Health, seeks to promote public health and safety by protecting residents from exposure to biological, chemical, and physical hazards. DEH achieves this endeavor by maintaining three program areas: The Consumer Protection Program; the Onsite Sewage and Water Program; and the Disease-Carrying Insects Program. The primary services conducted by these programs include issuance of permits, regulatory safety inspections, complaint investigations, commercial and residential plan reviews, surveillance and control activities, and community outreach. DEH supports the general public, the regulated community and other agencies in encouraging healthy behaviors and maintaining voluntary, long-term compliance with state and local regulations.

DEH strives to integrate Health in All Policies (HiAP). By definition, HiAP recognizes that health and well-being are influenced by a variety of factors beyond health care, including the social and environmental conditions in our communities. HiAP is a collaborative approach to improving community health by incorporating health considerations into decision-making across sectors and policy areas, including policies related to environmental sustainability and stewardship.

DEH addresses sustainability and environmental wellness within the following areas:

Ground and Surface Water – DEH regulates the design, installation, operation and maintenance of private sewage disposal and well water systems. Effective installation and maintenance allows for appropriate treatment of

sewage and protection of ground water and drinking water supplies from contamination. DEH also partners with DPWES to maintain the infrastructure of the public sewer system and to reduce sanitary sewer overflows or accidental discharges to the environment. For instance, DEH produced a brochure titled *Understanding Your Grease Trap-Interceptor*, which informs regulated food establishments of the procedures to prevent or reduce the amounts of fats, oil and grease (FOG) being discharged into the sewer. See www.fairfaxcounty.gov/health/sites/health/files/assets/documents/pdf/grease-trap.pdf.

Disease-Carrying Insects Program – The bite of an infected mosquito or tick may result in a life-changing illness, such as West Nile virus, Zika virus, Chikungunya virus or Lyme disease. The DEH's Disease Carrying Insects Program (DCIP), established in 2003, works to minimize the threat of vector-borne diseases through active surveillance, community education, and vector control. The DCIP utilizes an ecological approach to control pests of public health importance, guided by the principles of Integrated Pest Management (IPM). IPM combines appropriate pest control strategies into a unified, site-specific plan. The goal of an IPM program is to reduce pest numbers to acceptable levels in ways that are practical, cost-effective and safe for people and the environment. For instance, most larvicides used by DCIP are derived from naturally-occurring soil bacteria that specifically target mosquitoes, minimizing the impact on non-target organisms that may be beneficial to the environment. Products with different modes of action and active ingredients are routinely rotated to help minimize pesticide resistance in local vector populations. DCIP staff also survey and apply vector control interventions throughout various stormwater ponds in Fairfax County. See www.fairfaxcounty.gov/health/fighthebite. Pesticides are just one component of IPM. Other methods include public education and personal protection, which encourages behavior change at the individual and community level to help reduce the need for pesticide applications.

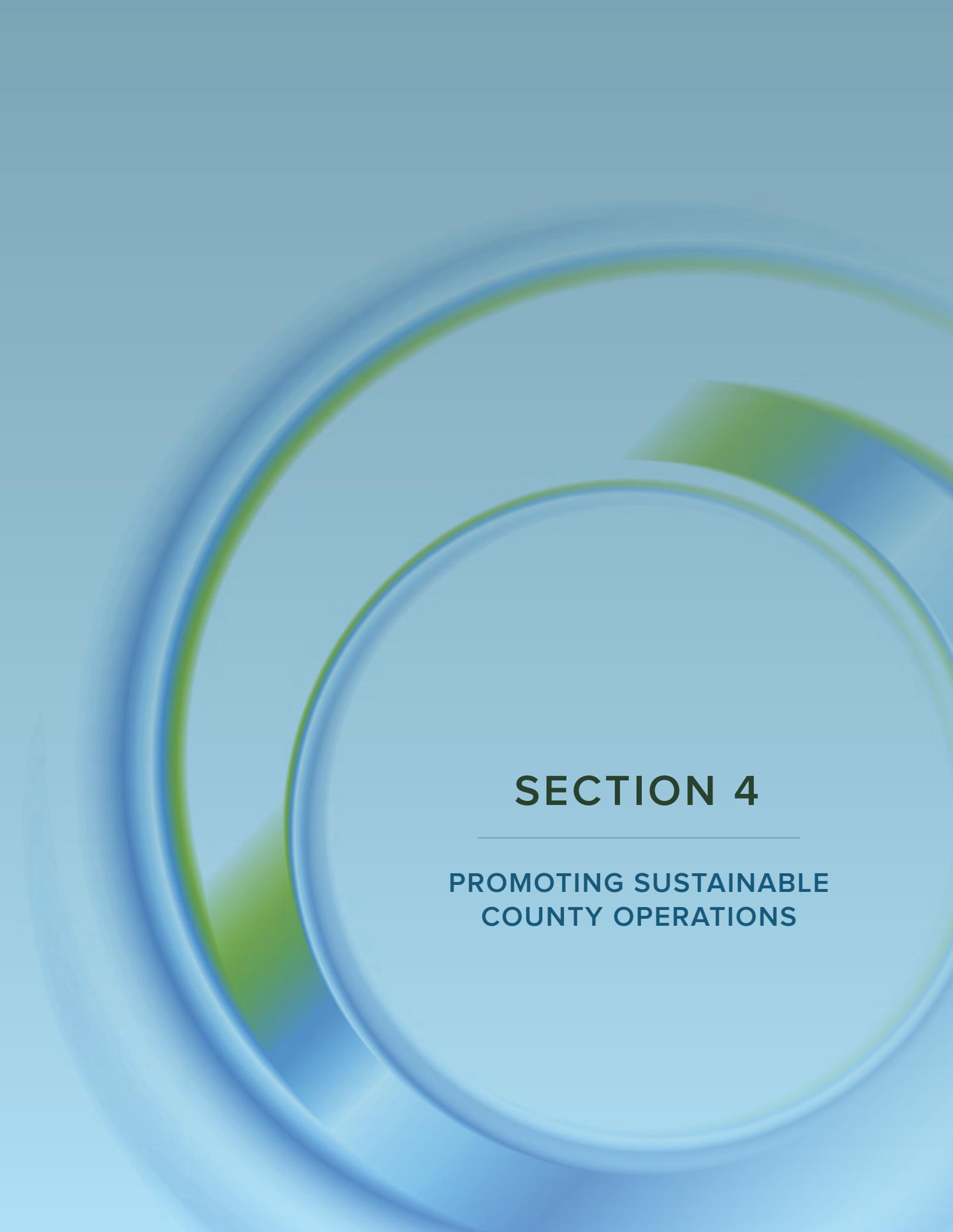
Rabies – Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to the Centers for Disease Control and Prevention each year occur in wild animals like raccoons, skunks, bats and foxes. Domestic animals account for less than 10 percent of the reported rabies cases. State law and county ordinance require dogs and cats four months of age and older to be inoculated against rabies. Each year, Fairfax County offers several reduced-cost rabies vaccination clinics for pets. See www.fairfaxcounty.gov/health/rabies.

Radon – Radon is a naturally-occurring radioactive gas produced by the breakdown of uranium in soil, rock and water. It cannot be seen, smelled or tasted. Long-term exposure to elevated radon levels is estimated to cause thousands of lung cancer deaths nationally each year. The EPA has identified

Fairfax as having a high risk for radon. The County's Radon Potential Map provides a general description of radon within Fairfax County. See www.fairfaxcounty.gov/health/sites/health/files/Assets/images/radon-potential-map.gif. The County's radon webpage also provides links for more information from the Virginia Department of Health and EPA to help homeowners assess their risk of radon exposure and learn how to mitigate elevated radon levels in their homes. See www.fairfaxcounty.gov/health/environment/air/radon.

Naturally-Occurring Asbestos – Naturally-occurring asbestos has been mapped in approximately 11 square miles of Fairfax County and Fairfax City. Asbestos-bearing rock is interspersed in the greenstone rock formations that underlie the surface soils in the orange soils group. Specific locations have been identified to help reduce exposure to asbestos during construction or other earth-disturbing activities. Surface exposures of these rock formations are not usually seen. See www.fairfaxcounty.gov/health/environment/asbestos.





SECTION 4

PROMOTING SUSTAINABLE
COUNTY OPERATIONS

PROMOTING SUSTAINABLE COUNTY OPERATIONS

Featured in this Section

4.1	Introduction	93
4.2	Building Design and Construction	93
4.2.1	Green Building Policy for County Facilities	93
4.2.2	Sustainable Design Strategies for Capital Projects	95
4.2.3	Selected Capital Improvement Projects	96
4.3	Procurement and Material Management	98
4.3.1	Sustainable Procurement Program	98
4.3.2	Surplus Items	100
4.4	Facilities and Site Management	101
4.4.1	FMD Energy Management	101
4.5	Information Technology	103
4.5.1	IT Energy Efficiency Initiatives	103
4.6	Waste Management	104
4.6.1	Solid Waste Management Program Sustainable Operations	104
4.6.2	Solid Waste Management Program Pilot Initiatives	107
4.7	Vehicle Services	107
4.7.1	Hybrid and Electric Fleet	108
4.7.2	Other Vehicle Services Initiatives	108
4.8	Fairfax Employees for Environmental Excellence	110

SECTION 4

4.1 Introduction

Fairfax County government has long been proactive in its environmental stewardship, as described in the preceding sections. Section 4 describes several of the county's innovative and successful efforts to implement environmental and energy goals and policies for county facilities and operations.

Significant efforts have been made over time to reduce the county's operational demand for energy through efficiency, conservation and education. The basis for these efforts is Fairfax County's strategic direction and commitment to achieve environmental and energy goals, including those set forth in the board's Environmental Vision, originally adopted in 2004 and updated in 2017; the 2007 Cool Counties initiative, superseded in 2021 by the Carbon Neutral Counties Declaration; the Operational Energy Strategy, originally adopted in 2018 and updated in 2021; and the county's Comprehensive Plan.

Collaboration across departments and agencies is vital to ensuring coordinated action and achieving these goals. Periodic meetings chaired by the Office of Environmental and Energy Coordination provide a forum for participants to share project updates, discuss emerging trends and technologies, candidly review their experiences with equipment and systems, and raise issues of mutual interest.

4.2 Building Design and Construction

4.2.1 Green Building Policy for County Facilities

The green building policy for Fairfax County facilities dates to 2008, when the Board of Supervisors adopted a Sustainable Development Policy for Capital Projects. This policy, which applied to the construction of new county buildings and major renovations or additions to existing buildings, required county government buildings of more than 10,000 square feet to meet or exceed minimum green building standards. Since the adoption of the green building policy in 2008, thirty-four county buildings have been certified under the Leadership in Energy and Environmental Design® (LEED) program of the U.S. Green Building Council, with 15 of these building certified as LEED Gold and 19 certified as LEED Silver.

In September 2020, the Board adopted an update to this policy that demonstrated a greater commitment to environmental, economic, and social stewardship. This 2020 update established minimum energy performance improvement criteria and described a multi-year transition to Net Zero Energy (NZE). The update also established LEED Gold as the minimum certification level, with a focus on renewable energy generation and reduction of greenhouse gas (GHG) emissions. Moreover, the 2020 policy incorporated

a commitment to an ongoing program for monitoring and analysis of actual building energy performance data; identifying existing buildings as priority candidates for systems recommissioning; recommissioning of priority buildings with initial focus on buildings previously certified by LEED; and for more proactive management of building systems and controls.

In July 2021, the board further strengthened its green building policies, following its adoption of the Carbon Neutral Counties Declaration, as discussed in Section 2.2.3 and as part of its adoption of the 2021 Operational Energy Strategy (OES), as discussed in Section 2.2.4. The minimum energy performance improvement criteria and multi-year transition to NZE were replaced with a NZE standard and provisions regarding building electrification. County public school projects continue to be designed using the Virginia-Collaborative for High Performance Schools (VA-CHPS) criteria.

The county's 2021 update to its green building policy is set forth in the Green Building section of the 2021 OES. It provides that, for facilities with an occupied area greater than 10,000 square feet:

1. All new construction and major renovations beginning planning and design in 2021 must meet NZE standards unless the Board of Supervisors is advised prior to the 30% design phase as to why the project cannot meet the NZE standard. LEED Gold plus 50% more efficient than baseline is the minimum certification.
2. All new facility construction, additions and major renovations (a) beginning design in FY 2022 or later are electric-ready and (b) beginning design in FY 2024 or later use only electric equipment and appliances, unless no alternative can be identified.

The construction of NZE and near-NZE buildings and major renovations is a critical component of Fairfax County's plan to achieve energy carbon neutrality. Minimizing energy use through efficient building design is a fundamental design criterion. In addition, as the electric grid in Virginia continues to decarbonize, ensuring that new construction and major renovations avoid direct use of fossil fuels allows the county to further reduce carbon emissions while maximizing use of on-site renewable electricity from solar photovoltaics. There are currently three projects in design tracking NZE.

The sustainability of county infrastructure projects is enhanced and evaluated using the Envision rating system, a flexible system of criteria and performance objectives that helps identify sustainable approaches during all project phases, from planning, design and construction through operations and maintenance and end-of-life phases. The county's Disinfection System Replacement project at the Noman M. Cole, Jr. Pollution Control Plant received Gold Certification under Envision, while its Huntington Levee project received Bronze Certification. County garages follow Parksmart Sustainability Rating System.

4.2.2 Sustainable Design Strategies for Capital Projects

The county's green building policy is intended to reduce the consumption of non-renewable resources, reduce greenhouse gas emissions, minimize waste, and foster healthy, productive environments.

Design Phase: Early in the design phase, the county explores cost-effective opportunities to reduce energy consumption and greenhouse gas emissions by focusing on energy demand, energy efficiency, and on-site renewable energy generation.

- **Energy Demand:** Strategies to reduce a building's energy demand include setting energy goals and targets, sizing the building appropriately, orienting the building to take advantage of natural ventilation and solar capabilities, designing a building envelope that reduces heating and cooling losses, and monitoring building energy consumption.
- **Energy Efficiency:** Strategies to maximize energy efficiency include using passive design opportunities, installing high-performance building systems and appliances, using energy modeling software to simulate energy demand and determine and prioritize energy efficiency measures and system types, and commissioning to verify that all systems meet design, installation and operation requirements.
- **Renewable Energy:** All projects are analyzed early in design to determine the feasibility of solar photovoltaic systems and ensure appropriate design to accommodate on-site solar generation if appropriate.

Post occupancy activities are required to maintain energy performance targets. These activities include training for operations and management personnel regarding proper operation of new building system technologies and continuous commissioning and retro commissioning to ensure that the facility is performing as designed as well as to support future changes by the end user.

The design phase also explores and addresses other aspects of sustainability, including water conservation, sustainable sites, indoor environmental quality, and material resource and waste management.

- **Water Conservation:** In addition to installing low-flow plumbing fixtures, various strategies are explored and evaluated in the design phase to conserve and creatively reuse water, including rainwater harvesting, the use of natural landscaping and native species to reduce irrigation needs, and the feasibility of installing a green roof to minimize heating and cooling costs. Both natural landscaping and green roofs offer the added benefit of reducing stormwater runoff.
- **Sustainable Sites:** The selection and development of sites is key to reducing and mitigating impact to the surrounding environment and in helping

*Green roof installation at the
Herrity Building Parking Garage*



preserve biodiversity and natural habitat. Considerations evaluated during the design phase include available transportation options, the facility's parking footprint and amount of impervious cover, and low impact development (LID) practices that replicate the natural hydrology and water balance of the site, thereby reducing stormwater runoff volume and improving water quality.

- **Indoor Environmental Quality:** High quality indoor environments promote occupant health and comfort and are associated with enhanced productivity, decreased absenteeism and increased building value. Strategies that help achieve indoor environmental quality include products with low volatile organic compounds (VOC), green cleaning products and procedures, and daylighting to enhance indoor lighting quality.
- **Materials and Waste Management:** To help minimize embodied energy, project requirements emphasize the use of locally produced materials as well as the development and implementation of a construction and demolition waste management plan. The goal of the plan is to recover, reuse and recycle materials so as to reduce waste disposed of in landfills and incineration facilities.

4.2.3 Selected Capital Improvement Projects

Some examples of recently completed capital improvement projects by Fairfax County include:

- **The Public Safety Headquarters (PSHQ):** Achieved LEED Gold certification. The PSHQ accommodates both Police and Fire and Rescue Department administrative staff to maximize shared resources among first responder agencies that often work together in the field. Sustainable design strategies include energy-efficient LED lighting, daylight harvesting sensors that take advantage of natural lighting and adjust indoor light levels depending on the amount of sunlight available, use of low-flow plumbing fixtures and recycled materials, a 25,000-gallon tank that harvests water runoff and reuses it for

on-site irrigation, and a green roof, permeable pavements and stormwater management features that work together to slow down, filter, absorb and purify rain water as it leaves the site.

■ **The Lewinsville
Redevelopment Project:**

Achieved LEED Silver certification. The building provides a comfortable balance of spacious design and flexible multi-purpose spaces for both seniors and school age children. LED lighting along with occupancy sensors are provided to reduce energy consumption. Solar tubes provide natural lighting to the common lounge area while daylight harvesting sensors adjust indoor light levels in the dining areas and multi-purpose rooms. Other sustainable design strategies include: an

energy efficient variable refrigerant flow (VRF) mechanical system, recycled building materials and regionally sourced materials, use of low flow plumbing fixtures, low VOC emitting interior finishes to improve indoor air quality for the occupants, and use of native planting species for landscaping to eliminate the need for irrigation.

■ **Noman M. Cole, Jr. Pollution Control Plant (NMCCP):**

■ Achieved LEED Silver certification for a new monitoring and control building. The new Building V is almost twice as big as the building it replaces and provides around-the-clock monitoring and control of the entire wastewater treatment plant, as well as offices and a break room. Sustainable design features include a high-efficiency lighting and HVAC system designed to use 22 percent less energy, water-efficient plumbing fixtures that can reduce water consumption by 30 percent, exterior windows that use solar tubes to provide controlled daylight at employees'



*Public Safety
Headquarters*



*Lewinsville
Redevelopment Project*



*Noman M. Cole
Pollution Control Plant*

workstations, the use of plant effluent (treated wastewater) in toilets and urinals, and landscaping and hardscaping designed to minimize irrigation needs and to control stormwater quantity and quality.

- Achieved Envision Gold certification for Disinfection Improvements Project. The county's Noman M. Cole Pollution Control Plant (NMCCPP) treats more than 40 percent of the county's wastewater. The Disinfection Improvements Project replaced the plant's chemical disinfection system with an ultraviolet light system, thereby improving public and worker health and safety, protecting freshwater resources, and reducing the plant's carbon footprint, greenhouse gas emissions and chemical storage needs. Modernizing the disinfection system positions the plant to comply with permits and state regulations for higher flows predicted over the 20-year service life of the facility. Innovative strategies used for this project included the use of virtual reality to enhance design and construction processes.

4.3 Procurement and Material Management

4.3.1 Sustainable Procurement Program

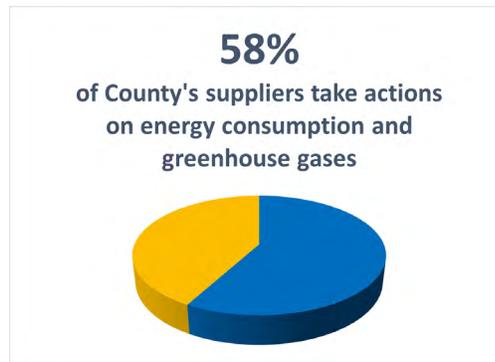
Fairfax County's Sustainable Procurement Program harnesses the county's purchasing power – over \$1 billion annually – to obtain cleaner, safer, and more sustainable and equitable products and services.

The Board of Supervisors has charted the county's direction through its adoption of policies including One Fairfax and the Environmental Vision. The Sustainable Procurement Program within the Department of Procurement and Material Management (DPMM) directly supports these and other policies and works to ensure not only that the goods and services procured directly reflect the county's values, but that the thousands of suppliers making up the county's supply chain do so as well.

When applied on a long-term basis, sustainable procurement can help achieve the county's social equity, environmental and economic development goals. In addition, with such a large market share, public buyers like Fairfax County can help drive markets towards sustainable solutions. DPMM and the Sustainable Procurement Program act as a catalyst for innovative solutions, including systematic consideration of sustainability in the procurement process, involvement in the county's Zero Waste initiative, and collaborative efforts to improve the county's operational sustainability:

Systematic consideration of sustainability: In mid-2019, DPMM launched its Supply Chain Corporate Social Responsibility ("CSR") program to better understand the social and environmental impacts of the county's procurement expenditures. To undertake this program, DPMM partnered with a third-party

sustainability ratings provider to conduct comprehensive CSR assessments of the county's key suppliers, covering four areas of sustainability: environment, labor and human rights, ethics, and sustainable procurement (that is, how suppliers source their own materials and services).



DPMM invited almost 200 of its top suppliers, representing over \$550 million in annual spending, to participate and to date has gleaned insights into the sustainability performance of suppliers representing over \$275 million in annual spending. After an initial benchmarking period, DPMM will integrate CSR more formally into the procurement process. It looks forward to collaborating with suppliers to improve performance. More information about the CSR program is available at <https://www.fairfaxcounty.gov/procurement/responsible-and-sustainable-sourcing>.

Zero Waste initiative: The Operational Energy Strategy adopted by the board in 2021 sets a waste management target of Zero Waste by 2030. In furtherance of this target, DPMM led a multi-departmental team to create a Zero Waste Plan (Plan) for county and school operations. The Plan, which was adopted by the board in November 2021, emphasizes procurement and other system-wide reduction and reuse strategies as the most impactful solutions to reducing waste. In addition to policies and programs, Plan recommendations and elements include facility and equipment changes, education and engagement strategies, accountability mechanisms and metrics to track successes. Now that the Plan has been adopted, a key DPMM priority will be to develop a Sustainable Procurement Policy with guidelines embedding Zero Waste and other sustainability principles into the procurement process.

Improvements to the county's operational sustainability: DPMM continuously assists and consults with county departments and agencies to locate and promote contracts that have demonstrated environmental and energy benefits. These collaborative efforts have resulted in the procurement of a wide variety of more sustainable products and services, such as LEED-compatible furniture, computers certified in accordance with the Electronic Product Environmental Assessment Tool (EPEAT), energy- and paper-saving multi-function devices and office supplies, and the use of environmentally-friendly cleaning products and packaging in county facilities, where feasible. DPMM also promotes recycling, including establishing a standard of at least 30 percent recycled content in copy paper purchased by the county and carpet recycling. In alignment with the development of the Zero Waste Plan, DPMM is currently assessing additional procurement strategies that could help departments to prevent waste at its source.

In addition to promoting and facilitating sustainable procurement within the county, DPMM plays an important role in the development of sustainable solutions in a national marketplace. DPMM works with national cooperatives of procurement organizations such as the National Institute of Governmental Purchasing – which hosts the combined potential purchasing power of thousands of public agencies – to share best practices and strengthen green language in national solicitations. DPMM is also a member of the Sustainable Purchasing Leadership Council, a network of purchasing professionals and other market stakeholders focused on the issue of sustainability.

Within the county, DPMM's Sustainable Procurement Program manages the Supplier Diversity Program and a departmental Equity Team. This work includes developing strategies for more equitable procurement processes and providing training and individual support to thousands of potential suppliers to make procurement opportunities more accessible to Small, Women-Owned, Minority-Owned, and Service-Disabled Veteran Owned (SWaM) businesses. In FY 2021, DPMM staff hosted and/or participated in 28 events aimed at assisting diverse suppliers to find business opportunities with Fairfax County and developed a process for reviewing and amending internal procurement policies and processes to ensure they are as equitable as possible. Further, DPMM played a formative role in, and continues to partner with, the Fairfax Employees for Environmental Excellence (FEEE), an advisory group of employees that supports efforts to promote environmental awareness.

4.3.2 Surplus Items

DPMM promotes the responsible reuse and disposal of surplus items through a variety of approaches, including:

- Expanding recycling options by using trade-in, “producer responsibility” and take-back clauses in vendor contracts.
- Marketing and selling surplus equipment on consignment and by on-line and sealed-bid auctions.
- Fostering strategic donations of surplus equipment to charities that further the county's mission.

DPMM's on-line *Reuse, Sale, Recycle* program to manage surplus property countywide is a notable success in this area. Its use of e-auctions, which are open to the public, optimizes revenue from the sale of surplus sporting goods, office furniture, office equipment, industrial machinery, tools, household and industrial appliances, fleet vehicles and specialized vehicles such as fire trucks and trash trucks. In addition, the on-line reuse program allows employees to shop for surplus equipment from their desks and have items delivered, all at no direct cost to the requesting department. The *Reuse, Sale, Recycle* program has increased item reuse rate, decreased

disposal costs and saved thousands on the purchase of new equipment. In FY 2021 the county redistributed or sold 93 percent of surplus property, achieving \$640,000 in sales revenue.

The county's surplus electronics disposal program, encompassing any item with a circuit board, balances information protection, environmental considerations and revenue. DPMM's e-cycling contract offers robust recycling options that include de-manufacturing the equipment for recycling and refurbishing components for continued use in new manufacturing. Other recycling initiatives address toner cartridges, batteries, scrap metal, used tires and spent oil.

In FY 2021, through a competitive procurement process and strategic vetting, DPMM contracted two new business partners to manage the county's surplus property and electronics disposal programs, respectively, in ways that will enable the county to move closer to its zero-waste goal, enhance efficiency, and stimulate more revenue generating opportunities.

More information about DPMM's environmentally responsible surplus property programs is available at www.fairfaxcounty.gov/procurement/logistics/surplus.

4.4 Facilities and Site Management

Fairfax County's Facilities Management Department (FMD) portfolio is comprised of over 240 properties, totaling over 12 million square feet of space. This space includes offices, libraries, community centers, day care facilities, courts, labs, residential care facilities, health care facilities, parking garages, and 24/7 facilities such as fire stations, police stations, shelters, and correctional facilities. FMD's portfolio does not include facilities operated by the Department of Public Works and Environmental Services, the Park Authority, the Redevelopment and Housing Authority or Fairfax County Public Schools. FMD focuses on a number of areas to fulfill its mission of providing safe, comfortable, and well-maintained facilities. FMD's main focus areas include infrastructure replacement and upgrade, energy management performance, and real estate services.

4.4.1 FMD Energy Management

Energy management is an important focus area for FMD, because by reducing energy consumption, FMD reduces both greenhouse gas emissions and energy costs. Well over a decade ago, FMD established an internal goal of reducing energy use by one percent per year, as measured in one thousand British thermal units (kBtu) per square foot. FMD routinely met and frequently exceeded this goal. It is now working to help meet the much more ambitious energy reduction goals set by the board in 2021, including the goal of achieving energy carbon neutrality by 2040.



FMD undertakes a wide range of energy improvement projects to achieve energy savings. It installs energy management control systems; right-sizes heating, ventilation and air conditioning (HVAC) equipment; installs lighting controls and efficient LED lighting, replaces aging roofs, caulking, and window sealant;

and maximizes energy-recovery systems. Electrical demand meters are also being added to a number of facilities to track electrical usage and reduce peak demand, which is a key driver in electric utility costs.

As funding is made available through the Infrastructure Replacement and Upgrade Program, old and less efficient HVAC and lighting systems are being replaced by more efficient systems using current technology. The department is leveraging technology and products when possible to provide efficiencies within electrical and HVAC systems because of the increased importance of establishing energy efficiencies within county facilities. The variance in energy consumption from the previous year, measured in kBtu per square foot, decreased from negative (6.53) in FY 2019 to negative (3.54) in FY 2020. For FY 2021 and FY 2022, lower consumption is projected based on the expectation that energy management improvements will more than offset increases due to total square feet of building growth.

FMD also has undertaken improvements to reduce water use. Part of a multi-phase two-year project at the Government Center replaced all restroom and locker room flush valves and faucets with low-flow, infrared sensor-operated fixtures and replaced shower heads with low-flow fixtures. Submeters have been installed on most major cooling towers throughout the county to monitor water use and reduce sewer costs.

FMD is responsible for over 700 energy and water accounts at county government facilities. Utility consumption is tracked, monitored and managed using monthly utility bill data, online electric 30-minute trend data, real-time metering systems, and building energy management systems (BMS). FMD's BMS systems provide real-time operational data that can be used for troubleshooting. These systems allow for remote adjustments to HVAC and other energy related systems. Using information from these systems, FMD can identify cost-saving opportunities and achieve utility savings by resolving leaks, enhancing equipment efficiencies and correcting problems with building controls or HVAC systems.

4.5 Information Technology

4.5.1 IT Energy Efficiency Initiatives

Fairfax County's information technology (IT) infrastructure is designed to ensure the continuous delivery of quality services in a cost-effective and resource-efficient manner. IT initiatives related to energy efficiency reduce the power consumption of IT equipment, decrease greenhouse gas emissions and reduce the county's carbon footprint.

Virtualization and cloud-computing technologies are the foundation of the county's agile enterprise infrastructure architecture. Elements of this strategic approach include consolidating and standardizing IT resources while ensuring visibility, security and accountability. The county's server virtualization and consolidation initiative, which was established in FY 2007-2008, has reduced the need for physical servers from 870 to fewer than 100.

In 2009, a federal stimulus award helped accelerate the deployment of a personal computer (PC) power management program and laptop deployment. The "NightWatchman" program automatically shuts down over 12,000 end-user laptops across 55 offices when not in operation. The NightWatchman program also supports the county's virtualization initiative. Because it measures server workloads, the program helps determine which servers are underutilized and thus are good candidates for virtualization and consolidation.

The county's Department of Information Technology also has partnered with data center and cloud providers who are proactively focusing on innovative approaches to reducing energy consumption, including use of:

- *Adaptive control systems* that reduce power consumption and increase cooling capacity through active airflow management using intelligent, distributed sensors and innovative control policies;
- *ASHRAE thermal guidelines* designed to reduce power consumption for cooling, while maintaining a safe operating temperature for computing equipment;
- *Cold/hot aisle containment* to lower energy consumption and enable more efficient cooling by using physical barriers to reduce the mixing of cold air in data center supply aisles with the hot air in exhaust aisles;
- *Energy-efficient lighting systems* that use motion-activated controls and/or LED lighting to reduce energy consumption and ambient heat from operating lights;
- *Fuel cells* that place electricity supply in close proximity to energy-consuming equipment to maximize efficiency and increase resiliency; and
- *Green rooftops*, where coverage with plants and vegetation helps keep the buildings cool, thereby lowering cooling costs, while also reducing stormwater runoff that can contribute to water pollution and flooding.

The county's virtualization initiative and PC power management programs have been nationally recognized for achieving carbon reductions and operational efficiencies. More information about Fairfax County's IT program and initiatives is available at www.fairfaxcounty.gov/informationtechnology/it-plan.

4.6 Waste Management

The county's Solid Waste Management Program (SWMP) is responsible for the management and/or oversight and long-range planning for all refuse collection, recycling, and disposal operations within Fairfax County. Operations include a county-owned and operated refuse transfer station, two closed municipal solid waste landfills, a regional ashfill operated by the county, two recycling and disposal facilities, and equipment and facilities for refuse collection, disposal, and recycling operations. This subsection highlights several of the SWMP's sustainability initiatives and pilot programs.

4.6.1 Solid Waste Management Program Sustainable Operations

■ Glass Recycling

In 2019, Fairfax County discontinued the collection of glass in single-stream curbside recycling programs due to issues including contamination. That same year, it invested in a large-scale glass crushing and screening operation to convert source-separated glass from drop-off sites into sand and gravel. The resulting material can be used in a wide variety of civil engineering and other technical applications, such as pipe laying, drainage features, and road building.

The ability to recycle glass was well-received by the public, even if it required a special trip to a drop-off location. As the county's project evolved, the City of Alexandria, Arlington County, and Prince William County joined the program. Soon thereafter, to establish a common understanding for the public throughout the region, the program was renamed the "purple can club" and the drop-off dumpsters used to collect glass were painted a bright purple. Use of a single, consistent color helped convey that a "purple container means glass only." The purple can club continues to grow as more jurisdictions join the program.



Glass recycling drop-off container

As of May of 2021, the program has collected over 25 million pounds of glass, most of which is of such good quality that it is used in glass-to-glass recycling. More information about the purple can club and glass recycling in Fairfax County is available at <https://www.fairfaxcounty.gov/publicworks/recycling-trash/glass>.

■ Landfill Gas Recovery and Reuse

Landfill gas (LFG) is a mixture of methane, carbon dioxide, and a host of volatile organic compounds (VOCs) that are the by-products of the decomposition of organic matter buried in sanitary landfills. The county currently recovers LFG from over 230 wells at the I-95 Landfill and 84 wells at I-66 Transfer Station and uses the LFG to produce electricity, incinerate bio-solids and heat maintenance facilities. The county's LFG use prevents the release of an estimated 220,000 tons (CO₂ equivalents) of greenhouse gases annually.



Landfill Gas Recovery and Reuse System

LFG captured from the I-95 Landfill fuels generators at the site, the electricity from which is sold into the wholesale electric market. In 2020, these generators produced an average of 2.25 megawatts of electricity. In addition, LFG from the I-95 Landfill is transmitted by pipeline to the nearby Noman M. Cole, Jr. Pollution Control Plant for use in the plant's incineration process to destroy bio-solids and to fuel afterburners that reduce hydrocarbon emissions. At the I-66 Transfer Station, LFG from the closed I-66 Landfill is used to heat a nearby WMATA bus maintenance facility.

■ Waste-to-Energy

The county contracts with Covanta Fairfax, LLC to accept the county's municipal solid waste at its waste-to-energy plant in Lorton. At the plant, which began commercial operation in June 1990, Covanta burns municipal solid waste to power steam turbines that generate electricity, which is then sold into the wholesale market. According to Covanta, the plant generates approximately 80 megawatts of electricity, or enough to meet the needs of approximately 62,000 homes.

Incineration at the waste-to-energy plant eliminates methane gas and other greenhouse gases on a ton-for-ton basis. It also reduces waste by up to 90 percent in volume, leaving an ash product that is landfilled. As a result of pre-incineration sorting and post-incineration recovery, enough metal is recycled

*Covanta Fairfax
Waste-to-Energy Plant*



each year to build over 20,000 automobiles. More information about the Covanta facility is available at www.fairfaxcounty.gov/publicworks/recycling-trash/energy-resource-recovery-facility.

■ Water Reuse

Fairfax County's Water Reuse Program delivers clean but non-potable water from the Noman M. Cole Jr. Pollution Control Plant to non-residential customers for irrigation and industrial purposes. Reusing water conserves valuable treated drinking water and reduces the amounts of nitrogen and phosphorus that reach the Chesapeake Bay. Water reuse also generates revenue for the county. The program delivered 500 million gallons of reclaimed water in 2018.

The Water Reuse Program sells water that is not safe for drinking but is safe for other uses, such as watering lawns. Prior to delivery, the water is extensively filtered, disinfected, and treated to remove harmful organisms, bacteria, viruses and heavy metals. To avoid confusion, every pipe that carries the reclaimed water is painted purple, and purple signs are posted at any public location where reclaimed water is being used. A purple water reuse pipeline installed along Lorton Road connects the Pollution Control Plant to the county's waste-to-energy plant, delivering treated reclaimed non-potable water to the Covanta waste-to-energy plant for its use in generating electricity. The pipeline also delivers reclaimed water to both the Laurel Hill Golf Course and the Lower Potomac Ball Fields for irrigation purposes.

The county's use of reclaimed water has both economic and environmental benefits. It requires an estimated 2,300-kilowatt hours of electricity to pump, treat, transmit and distribute one million gallons of potable water.

The electricity use associated with reclaimed water is substantially reduced because the water is not treated to the levels required for potable water. Lower electricity costs translate to lower purchase costs. Reductions in electricity use also translate to reductions in greenhouse gas emissions. County staff estimates

that using reclaimed water saves approximately 1.1 pounds of equivalent carbon dioxide (CO₂e) per kilowatt hour, based on the mix of generation sources that supply electricity to the Northern Virginia region.

More information about Fairfax County's water reuse program is available at <https://www.fairfaxcounty.gov/publicworks/wastewater/water-reuse>.

4.6.2 Solid Waste Management Program Pilot Initiatives

■ Food Waste Composting Pilot

In November of 2020, the Solid Waste Management Program launched a food-waste composting pilot program with two drop-off locations for residents: one at the I-66 Transfer Station and another at the I-95 Landfill Complex. Since the launch, both sites have seen increasing use by residents. At the end of FY 2021, a total of 28,000 pounds of food waste had been collected at these two locations.

In mid-2021, food waste collection points were added to four Farmers Markets in the Alexandria, Burke, Fairfax and Herndon areas. Information about the food-waste composting pilot and the Farmers Markets drop-off points is available at <https://www.fairfaxcounty.gov/publicworks/recycling-trash/food-scrap-composting-drop>.

■ Electric Vehicle and Charging Infrastructure Pilot

In 2021, the Solid Waste Management Program and the Department of Vehicle Services (DVS) were awarded a grant from the Virginia Department of Environmental Quality (DEQ) and the Clean Air Communities Program (CACP) to support the purchase of four Class 8 waste collection and transportation electric vehicles (EVs) and one Class 6 electric truck, as well as electric vehicle charging infrastructure.

The vehicles will be used for daily trash and recycling collections from county customers and also for transporting waste from the I-66 Transfer Station to the Covanta waste-to-energy plant, making them highly visible to the public.

4.7 Vehicle Services

The Department of Vehicle Services (DVS) provides management, maintenance and repair services to the county's vehicle fleet and maintenance and repair services to Fairfax County Public Schools. It also is responsible for managing the county's Vehicle Replacement Fund. The Department of Transportation (DOT) provides, among many other services, the Fairfax Connector transit bus system for public transportation throughout the county. Both agencies strive for economically responsible environmental stewardship by working increased fuel efficiency and reduced emissions and petroleum consumption characteristics into vehicle specifications. Specifications for new, heavy-duty trucks favor the

cleanest diesel engines by utilizing the latest emissions control technologies and right-sizing engine displacement.

4.7.1 Hybrid and Electric Fleet

In July 2021, the Board adopted an updated Operational Energy Strategy (OES) that supports the transition from gasoline- and diesel-powered vehicles to hybrid-electric and electric vehicles (EVs). With respect to passenger vehicles, this transition has been underway for several years. Specifically, the OES's ambitious goals and targets regarding county fleet vehicles are:

1. Develop a plan to use 100% non-carbon emitting fuels for county fleet vehicles by 2030. For non-bus fleet vehicles that may not have non-carbon emitting alternatives, develop a plan to mitigate emissions.
2. County buses and fleet vehicles will be electric or a non-carbon emitting alternative by 2035. By 2035, 99% of Connector bus fleet miles traveled will be with non-carbon emitting vehicles.
3. No diesel buses will be purchased after FY2024 without further Board discussion.

As a result of these new targets, a conventional gasoline-fueled county fleet vehicle at the end of its service life likely will be replaced with an electric or hybrid vehicle, depending on factors including the availability in the market and operational use of the vehicle. Staff is coordinating with the Department of Public Works and Environmental Services (DPWES) to include electric vehicle charging infrastructure in building plans and with the Facilities Management Department to build out infrastructure required at existing facilities.

As plug-in hybrid and electric vehicle models continue to come to market, DVS will procure them in place of traditional gasoline-powered vehicles, as appropriate. The county fleet currently includes 168 hybrids and 16 all-electric vehicles.

4.7.2 Other Vehicle Services Initiatives

Specifications for new vehicles purchased by DVS and DOT include features designed to reduce emissions and increase fuel efficiency. Since FY 2015, DVS has purchased all of its diesel-powered vehicles with Selective Catalytic Reduction (SCR) technology. SCR meets the EPA 2010 requirement of reducing engine emissions to near zero. Since 2009, DOT has included variable frequency cooling fans in the buses it purchases. These fans have reduced fuel consumption by 12 percent compared to vehicles with hydraulic fans. Currently, 184 Fairfax Connector buses, or 65 percent of the fleet, are equipped with variable frequency cooling fans.

DVS and DOT also have established a number of initiatives to improve the energy and environmental performance of the vehicles they manage and maintain. For example:

- To reduce fuel consumption and vehicular emissions, DVS and DOT programmed automatic idle shutdown into all county solid waste trucks and Fairfax Connector buses. This same technology is also specified on new vehicle purchases when appropriate.
- DOT transitioned to nitrogen filled tires to provide longer vehicle life and increased fuel mileage.
- After determining it to be cost-effective, DVS installed five Diesel Exhaust Fluid (DEF) dispensers adjacent to diesel fuel pumps, thereby allowing customers to purchase diesel fuel and DEF without moving their vehicles.
- DVS has also changed new vehicle engine specifications to right-size engine displacement to reduce fuel consumption and increase the reliability of the SCR systems.

In 2019, DVS renewed its participation as an Environmental Enterprise (E2) participant in the Virginia Environmental Excellence Program (VEEP) for all four DVS maintenance facilities. DVS has been a proud VEEP participant since 2003. In support of its 2019 renewal application, DVS described a range of its environmentally-responsible actions, including:

- The use of bio-degradable hydraulic fluids in DVS vehicle-lifting equipment;
- The purchase of two refrigerant recovery and recycling machines and a breathing-air system;
- An automotive parts recycling program for metals and catalytic converters; and
- A partnership with a local middle school and elementary school to donate over 200 pounds of unwanted clean plastic materials to Trex Company, Inc. for recycling into environmentally-responsible outdoor products.

DVS manages many environmental aspects daily to decrease the potential for any environmental impact using a comprehensive Environmental Management System.

In FY 2018 and 2019, DVS received funding from the Environmental Improvement Program to design and plant a pollinator meadow and increase natural landscaping to stabilize the soils at the Alban Maintenance Facility. In FY 2019, DVS coordinated with DPWES to convert 50,000 square feet of highly compacted soils that supported sparse, poor quality vegetation to an “unmowed” meadow and planted over 700 plants in support of pollinators. In FY 2019, staff converted 16,000 square feet of compacted soils. The project benefits the health of Accotink Creek and the Chesapeake Bay.

4.8 Fairfax Employees for Environmental Excellence

Fairfax Employees for Environmental Excellence (FEEE) serves as Fairfax County's employee green team. The group consists of county employees who are committed to environmental stewardship within Fairfax County government. FEEE's mission is to foster a greener workplace culture through education, outreach and engagement.

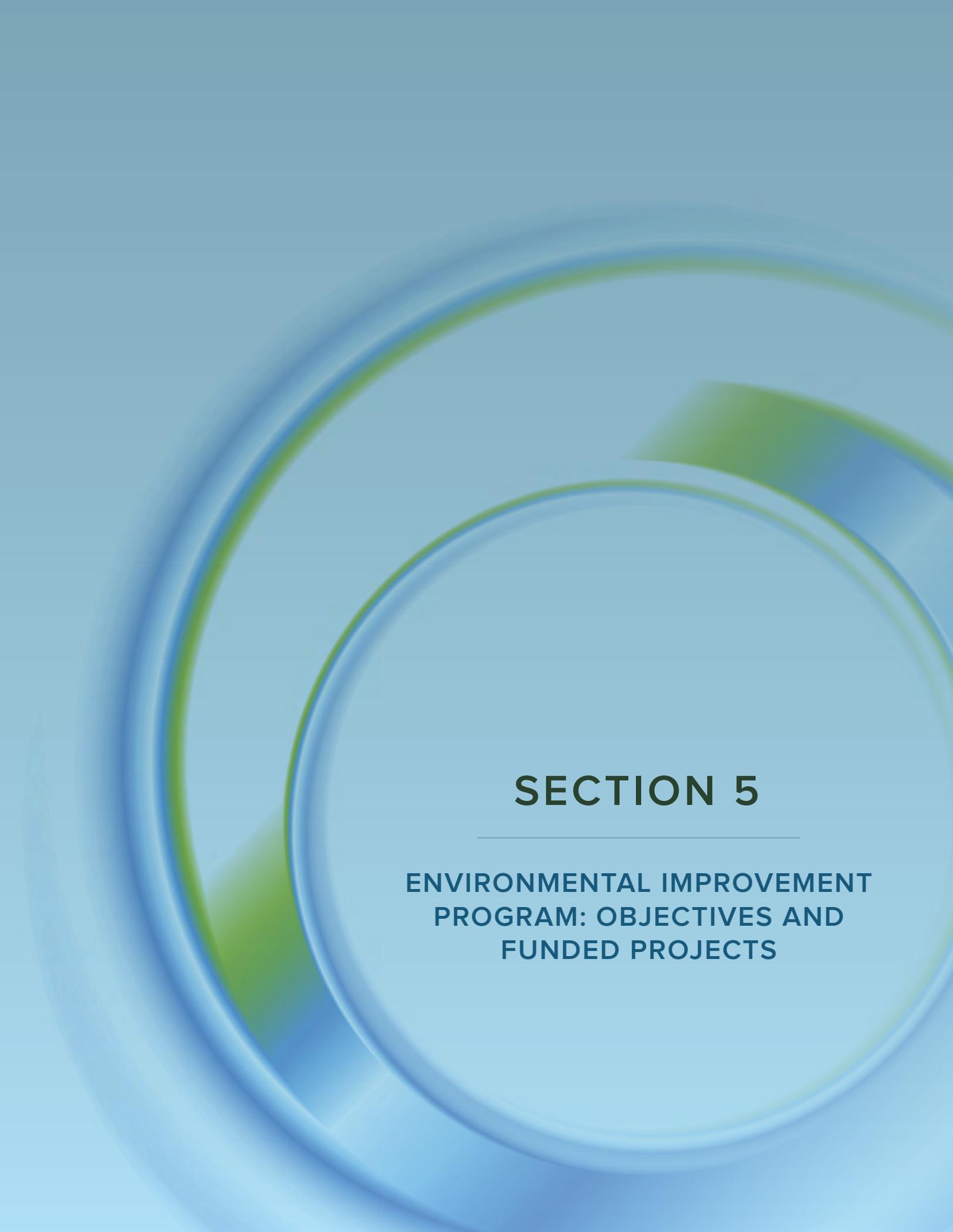
Cumulatively, the habitual behaviors of Fairfax County's 13,000 employees can have a significant environmental impact. FEEE focuses on steps that any employee can take in the areas of recycling, green purchasing, energy efficiency and more.

FEEE uses a periodic newsletter and the county's internal website to share information and highlight sustainability initiatives around the county. The website features a blog that enables all employees to join the conversation. FEEE also hosts presentations, webinars, booth displays, and educational tours of places and projects such as green roofs, stream restoration projects and recycling facilities including the region's Material Recovery Facility.

Despite the pandemic, FEEE continued to host virtual events and engage employees in 2020. FEEE's FY 2020 and FY 2021 highlights include:

- Presentations about composting and native plants;
- Webinars about sustainable donations and recycling;
- A Virtual Earth Day Fair in which participating departments discussed their sustainability initiatives and answered questions from employees;
- An ongoing employee composting program involving 17 departments; and
- A one-month litter challenge during which 32 participants collected 5,414 pieces of litter and recorded this data through an app so that the location and type of litter could also be tracked.

More information about FEEE can be found at <https://www.fairfaxcounty.gov/environment-energy-coordination/employees>.



SECTION 5

ENVIRONMENTAL IMPROVEMENT
PROGRAM: OBJECTIVES AND
FUNDED PROJECTS

ENVIRONMENTAL IMPROVEMENT PROGRAM: OBJECTIVES AND FUNDED PROJECTS

Featured in this Section

5.1	Introduction	113
5.2	Objectives	113
5.3	FY 2022 EIP Projects	114
	5.3.1 The EIP Project Selection Process	114
	5.3.2 FY 2022 Funding and Projects	115
5.4	EIP Delivered Projects History	119

SECTION 5

5.1 Introduction

The Environmental Improvement Program (EIP) was first developed in 2005 by the county's Environmental Coordinating Committee (ECC) in response to direction by the Board of Supervisors following the adoption of its Environmental Agenda on June 21, 2004. The ECC was a collaborative interagency management committee established to ensure an appropriate level of coordination and review of the county's environmental policies and initiatives. Its role has since been assumed by other inter-agency committees and the Office of Environmental and Energy Coordination.

The EIP provides the county executive and board with environmental and energy action-oriented opportunities to support board-adopted environmental and energy targets, policies and goals. EIP opportunities are updated annually using a collaborative project solicitation and selection process.

The Department of Management and Budget, with input from the county executive and his or her deputies, determines the appropriate level of funding that will be proposed for EIP projects in any given budget year. Since EIP project funding is supported by the county's General Fund, the amount of funding available varies from year to year. This section describes the EIP project solicitation, selection and funding process, provides details on current projects, and lists past projects.

5.2 Objectives

It is the county's overarching vision to attain a quality environment that provides for a high standard of living and is sustainable for future generations. No matter what income, age, gender, ethnicity, or address, everyone has a need and right to breathe clean air, to drink clean water, and to live and work in a quality environment. The Board of Supervisors has adopted several environmental and energy-related policies and initiatives in support of this vision, which are described in greater detail in Section 2.

The EIP provides an avenue for county agencies to develop programs and projects in support of Board-adopted environmental and energy policies and initiatives. Furthermore, these programs and projects can help the county meet state and federal guidelines and regulations in the face of a rapidly changing environment as the county continues to grow and develop. Understanding that it will take all of us to meet these challenges head-on, EIP applicants are encouraged to develop projects that involve the greater community, by incorporating either an educational or stewardship component.

Fairfax County oversees many different areas of business, which makes decisions on which county programs and initiatives to prioritize and fund difficult. The EIP ensures monies are set aside each year for environmental and energy projects and programs that would otherwise not receive funding. As stated in the Environmental Vision, “stewardship and prudent management of our natural environment and resources are not merely add-ons, or afterthoughts, but rather are essential and fundamental responsibilities that must be given fullest consideration at all times.” The EIP serves as one mechanism the county uses to fulfill the objectives of the Environmental Vision and evaluate solutions that will contribute to a quality environment for all.

5.3 FY 2022 EIP Projects

Fairfax County supports environmental and energy initiatives, including those of the board-adopted Environmental Vision and Operational Energy Strategy, through several county agencies and funds. There are also many environmental initiatives and projects carried out by individuals and groups each year. Section 2.4 provides a broad discussion of funds used for environmental efforts.

This section focuses on environmental and energy initiatives and projects that are supported through the EIP and selected through a collaborative and coordinated process.

5.3.1 The EIP Project Selection Process

In its 2012 Annual Report on the Environment, the Environmental Quality Advisory Council (EQAC) recommended that the EIP project selection process be formalized. In response to this recommendation, an interagency staff committee developed a rigorous project selection process to support the board-adopted Environmental Vision. This process, which was reviewed and supported by EQAC, has resulted in funding for many high-quality environmental projects beginning with the fiscal year (FY) 2014 Adopted Budget (July 1, 2013 - June 30, 2014).

Under this process, each fiscal year, county agencies have the opportunity to submit proposed projects for review, scoring and consideration. Each project proposal must include supporting detail, including technical and cost/benefit analyses. After the submission period closes, a staff committee screens the applications, conducts agency interviews for each project, and then evaluates and prioritizes all proposals. A final matrix of prioritized projects is submitted to the Department of Management and Budget and the Chief Financial Officer/Deputy County Executive for consideration in the County Executive’s advertised budget.

Staff-developed submission criteria provide guidance to the agencies as they develop their project proposals. Selection criteria guide committee members as they evaluate and prioritize the projects. Both the submission and selection criteria are derived from the board’s 2017 Environmental Vision and the seven

core service areas it addresses (see [Environmental Vision](#)) as well as the Operational Energy Strategy and the focus areas it addresses (see [Operational Energy Strategy](#)).

The EIP selection process occurs over a period of 6 months, as shown by this timeline:

- **June:** Memo sent to agencies soliciting submission of EIP proposal(s) for funding consideration.
- **August:** EIP Project Selection Committee (PSC) screens proposals to confirm compliance with submission criteria. Additional information may be requested from agencies, if necessary.
- **September:** PSC conducts preliminary scoring of proposals and schedules interviews.
- **October:** Agencies present proposal(s) to PSC and answer questions. PSC concludes final scoring based on preliminary scores and presentations, and presents its final list of prioritized EIP projects to the Chief Financial Officer.
- **November:** Chief Financial Officer presents final prioritized list of EIP projects to the County Executive.

5.3.2 FY 2022 Funding and Projects

The Board of Supervisors FY 2022 Adopted Budget included \$1,298,767 for 14 different EIP projects, an increase of \$382,152 from the FY 2021 Adopted Budget Plan. Funded projects for FY 2022 are detailed below.

Three FY 2022 EIP projects have received EIP funding previously:

- **Watershed Protection and Energy Conservation Matching Grant Program.** An amount of \$75,000 is included to support energy education and outreach initiatives and promote community engagement around sustainability and conservation issues. Specifically, in FY 2022, the program will provide financial incentives to empower civic associations, homeowner associations and places of worship to implement on-the-ground sustainability projects. Projects will improve water quality, reduce greenhouse gas emissions and conserve energy and water. The funding provides support for materials and printing, matching grants, outreach and education, site assessments, and inspections.
- **HomeWise Energy Education and Outreach:** An amount of \$88,000 is included for the “HomeWise” energy education and outreach program at low- and moderate-income housing in Fairfax County. HomeWise is intended to educate, empower, and enable low- and moderate-income residents to lower their utility bills by reducing their energy and water use. The program emphasizes relationship-building between qualified volunteers and specific communities in the county where energy-efficiency improvements and changes to daily behaviors are likely to have the greatest impact.



Results from an IMA program event

■ **Invasive Management Area (IMA) Program.** An amount of \$300,000 is included to continue the IMA program. The Park Authority manages this volunteer program, as well as other invasive removal initiatives. These programs restore hundreds of acres of important natural areas, protect tree canopy, and reach thousands of volunteers. More than 22,000 trained volunteer leaders have contributed 80,000 hours of service since the program’s inception in 2005, improving over 1,000 acres of parkland. IMA program activities ensure the ecological integrity of additional natural areas and prevent further degradation of their native communities.

Four FY 2022 EIP projects are very similar to those funded in prior years, including:

■ **Green Purchasing Program Internship and Zero Waste Certification:** An amount of \$15,000 has been included to support a Green Purchasing Program intern who will pursue Zero Waste Certification for the Springfield Logistics Center. The certification process serves as a foundational element from which facilities can achieve cost avoidance, support sustainable initiatives, and improve material life cycles. Zero Waste Certification, which is closely related to the county’s green purchasing efforts, is a one-time effort that requires significant documentation and third-party certification. Preliminary analysis indicates that “Silver” certification could be earned at existing operational levels. If certified, Fairfax County would become one of the first jurisdictions with a certified public facility.

■ **Meadow Restoration.** An amount of \$75,160 is included to fund the



restoration of three acres of meadows at Lake Fairfax. The restorations will establish native plant diversity and provide support to pollinators and native birds. Native plant communities and ecosystem functions including habitat provision and biodiversity will be restored to support wildlife populations, including pollinators and breeding birds. Funding will provide for restoration of three acres of meadows at Lake Fairfax and one-half acre at Green Springs Garden.

■ **Wetlands Restoration.**

An amount of \$86,000 is included for 1.25 acres of wetland restoration at Green Springs Garden, specifically the restoration of a magnolia bog. This type of bog is a rare geologic feature known to occur only in Virginia, Maryland, and the



Green Springs Garden

District. The magnolia bog at Green Springs Garden is one of only 11 known occurrences in Virginia, making its restoration and preservation of particular significance. The bog is located adjacent to a pedestrian trail at Green Springs Garden, offering unique interpretative and educational opportunities for visitors. Restoration activities will include the design and installation of a rock structure to stabilize soil and protect the bog’s hydrologic integrity, as well as the removal of non-native invasive plants and installation of native plants.

- **Natural Landscaping:** An amount of \$130,000 is included for Phase II of a natural landscaping initiative at the Government Center. This project is envisioned as a multi-phase, multi-year demonstration project that reimagines the Government Center grounds while creating inviting, comfortable and aesthetically pleasing outdoor spaces with ample shade and a unifying plant palette.

The remaining seven FY 2022 EIP projects are new projects:

- **Water Bottle Filling Stations:** An amount of \$36,400 is included to fund the purchase and installation of four water bottle filling stations at convenient locations within two county vehicle maintenance facilities. A water bottle filling station is a hands-free way of filling a refillable bottle with tap water, ensuring that both employees and customers awaiting repairs have a healthy hydration option. The bottle-filling stations will replace older drinking fountains that are not being used due to health concerns or because they have fallen into disrepair. It is anticipated that the stations will reduce waste associated with customer use of disposable water and soda bottles.

■ **Energy Efficiency Replacement Fund:** An amount of \$42,315 is included to fund a pilot Energy Efficient Replacement Fund. The fund will assist county departments in purchasing more efficient replacement appliances and equipment when there is a cost premium they cannot afford, even though that equipment would have the least cost in the long run due to utility bill savings. The fund also benefits those departments that do not pay their own utility bills and so do not directly reap the benefits of utility bill savings.



■ **AOP Treatment System:** An amount of \$46,400 is included to install an Advanced Oxidation Process (AOP) treatment system at a Park Authority pool to replace the existing ultraviolet (UV) water treatment system. An AOP treatment system improves air quality while yielding both electricity and chlorine cost savings. Its increased efficiency reduces the chlorine demand for the pool system, thereby reducing patron and lifeguard exposure when using or maintaining the pool. The improved air quality, which is the primary benefit of an AOP treatment system, is expected to reduce complaints from pool patrons.

■ **GHG Analysis of County Expenditures:** An amount of \$50,000 is included to conduct an analysis of the greenhouse gas (GHG) emissions related to the county's purchasing expenditures, or "spend." The county's spend is approximately \$1 billion annually and spans hundreds of sectors and thousands of suppliers. Using spend data from FY 2021, this project will develop a detailed understanding of the environmental impacts of the county's supply chain and inform staff as it develops programs and policies to improve the county's procurement-related environmental footprint.

■ **Composting Projects:** An amount of \$80,800 is included for two composting projects. An amount of \$11,800 will fund a Composting Pilot Program at Fairfax County government offices that will be managed by an employee volunteer group. In addition, an amount of \$69,000 is included to support a pilot composting program that is being developed by DPWES's Solid Waste Management Program (SWMP). SWMP plans to implement a pilot drop-off program for residential food scraps, with initial drop-off locations near the existing residential recycling drop-off centers at the I-66 Transfer Station and the I-95 Landfill Complex. The drop-off composting sites will be serviced up to three times per week by the selected contractor(s). SWMP efforts to help educate residents about the new program will include the creation and distribution of fact sheets, the development of an instructional video, and community presentations.

■ **Building Efficiency**

Improvements: An amount of \$127,500 is included for efficiency improvements at selected vacant historic houses maintained by the Park Authority. These historic houses are among those being considered for the Resident Curator



Ash Grove House

Program, in which a resident curator assumes responsibility for building rehabilitation in exchange for the right to occupy the property. Energy improvements to be made while the houses are vacant include adding insulation to crawlspaces and attics, adding weatherstripping and interior storm windows, and upgrading HVAC systems and controls.

- **EV Charging Stations:** An amount of \$146,192 is included to support the electric vehicle charging stations (EVCS) program and associated software to be located at county facilities for use by employees, patrons and the public. The specific number of charging stations that this amount will fund depends on the needs of the sites and the types of charging stations selected. The purchase of EVCS supports the boards objectives to reduce both the countys operational use of energy from fossil fuel sources and the greenhouse gas emissions associated with that energy use. It also supports the Operational Energy Strategy and the goal of electrifying the county’s vehicle fleet

In addition, an amount of \$58,140 has been provided in the Contributory Fund, to continue partnering with two non-profit agencies to support tree planting efforts throughout the County.

5.4 EIP Delivered Projects History

Fund 30015 of the county’s General Fund supports projects that advance the County’s Environmental Vision and Operational Energy Strategy, including those identified for funding through the county’s Environmental Improvement Program. EIP projects were first funded as part of the FY 2004 Carryover Review (September 2004). To date, approximately \$12.4 million in EIP project funding has been awarded, including projects funded under the FY 2022 Adopted Budget Plan.

Projects funded through the EIP to date include:

- Restoration of stream banks and meadows (including the purchase of a no-till seed drill for planting native grasses and wildflower seeds).



No-till seed drill



Propane extraction equipment

- Incorporation of energy efficiency and renewable energy systems projects at the Sully Woodlands Stewardship Education Center.
- The “Bike to Parks” bike rack installation pilot project.

- Protected Bike Lane Demonstration Project.
- “Watch the Green Grow” Education and Outreach Program.
- Green Purchasing Program.
- Purchase of propane extraction equipment to recover unused propane from cylinders that are disposed of as part of the County’s Household Hazardous Waste Program.
- Water conservation and efficiency measures at park golf courses and facilities, including RECenter pools.
- Installation of real-time water leak and freeze detection controls at county RECenters and historic buildings.
- Pollinator meadows at county facilities.
- The Honey Bee Initiative Pollinator Program at the I-95 landfill property.
- Purchase of electric ride-on mowers for Park Authority mowing operations.
- Purchase of wind energy.

- Installation of LED solar parking lot lighting.
- Air quality education and Clean Air Partners program (media sponsorship to continue public outreach to improve air quality).
- Conversion of 163 Fairfax Connector buses to ultra-low sulfur fuel and installation of particulate traps to reduce emissions.
- Community cleanup/revitalization/blight abatement projects.
- Toxicity reduction public outreach program.



LED solar parking lot lighting

- Expansion of the business recycling program.
- Pedestrian improvements in the Richmond Highway corridor.
- Restoration of riparian buffer zones.
- Low impact development demonstration projects.
- GIS-data green infrastructure for Park Authority natural resource management.
- Park trails mapping program, a comprehensive mapping program to allow the Park Authority to better plan and manage the trail system.
- Landfill gas utilization project at the I-66 and I-95 Landfills.
- Remote household hazardous waste collection events.
- Tree canopy campaign at county facilities.
- Energy efficiency/renewable energy initiatives at county facilities.
- Litter campaign.
- Energy education and outreach programs.
- Park Authority stewardship education programs.

The projects listed above have been supported by the county's General Fund. Other environmental projects have been supported by the Energy Efficiency and Conservation Block Grant (as part of the American Recovery and Reinvestment Act of 2009) and by the county's Contributory Fund (the latter of which funded tree planting partnerships with two nonprofit organizations).





SECTION 6

AWARDS AND RECOGNITIONS



AWARDS AND RECOGNITIONS

Featured in this Section

6.1	Selected Environmental Awards and Recognitions	125
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SECTION 6

6.1 Selected Environmental Awards and Recognitions

The following is a summary of awards that Fairfax County has received for its environmental and energy initiatives over the past decade.

2021 Awards

2021 Virginia American Planning Association, Commonwealth Plan of the Year Award. The county's Zoning Ordinance Modernization (zMOD) project, which was awarded Commonwealth Plan of the Year, was a wholesale modernization of the county's zoning ordinance for the first time in over 40 years. As a result of zMOD, the county's 1978 Ordinance was replaced with a version that is more reader-friendly and understandable and includes more tables, graphics, and hyperlinks. The Ordinance has been integrated into a user-friendly online platform that will be easy to navigate and usable on multiple devices, including cellphones and tablets. The new Ordinance includes modernized land uses and regulations, as well as corrections to gaps and inconsistencies in other regulations.

2021 Chesapeake Stormwater Network (CSN), Best BMP in the Bay Award (BUBBA), Retrofit Category, First Place. The Herrity Fountain on the Fairfax County Government Center Campus is an innovative project that enhances water quality treatment, increases green space, and re-uses captured stormwater in the bubbler fountain. The much-needed renovation of a malfunctioning fountain and reflecting pool evolved into an opportunity to showcase and test emerging green infrastructure technologies, including four stormwater best management practices (BMPs) and over 5,000 native perennial forbs, grasses, shrubs and trees. A unique feature of the rainwater harvesting system is the replacement of coarse sand in the filtering media with crushed, recycled glass provided by the county's Solid Waste Management Program.

2021 Chesapeake Stormwater Network (CSN), Innovative Stormwater Permit Implementation, Second Place. Operation Stream Shield (OSS) is a Fairfax County interagency program to improve the water quality of county streams while at the same time transforming lives of under- and unemployed adults. OSS was originally created to focus on the removal of trash reaching the county's waterways and riparian zones in accordance with the county's Municipal Separate Storm Sewer System (MS4) permit. However, the county has formed a partnership between the Department of Public Works and Environmental Services (DPWES) and the Office to Prevent and End Homelessness (OPEH) to employ county residents experiencing homelessness to not only remove litter but manage invasive species, perform general landscaping and complete other special projects as needed. Fairfax County currently partners with four homeless shelters to carry out this program.



Scott's Run Trail project

2021 Mid-Atlantic Chapter of the American Public Works Association Project of the Year for Transportation. Fairfax County's Scott's Run Trail project in McLean, Virginia, was recognized as Project of the Year for Transportation among projects under \$5 million. This winning project involved

construction of a half-mile long, 8-foot-wide asphalt pedestrian trail and two pedestrian bridges over Scott's Run to provide direct access to the McLean Metro Station. The established criteria for consideration for this award included: good construction management, safety performance and overall safety, community relations, environmental protection, unusual accomplishments under adverse conditions, exceptional efforts and innovations, and sustainability.

2021 National Association of Counties (NACo) Achievement Award. DPWES's Watershed Education and Outreach group was honored for its production of an Educational, Collaborative Online (ECO) video series. The ECO video series is an invaluable and inclusive tool connecting students and teachers to their local environment, regardless of access to in-person, outdoor education experiences. Prerecorded videos allow students and teachers to work at their own pace, enhancing accessibility to these products, while other videos allow for real-time, interactive labs and other guided virtual programming. The connection between the local school system and local scientists created through these videos ultimately engages and inspires the next generation of scientists.

2021 Volunteer Fairfax Environmental Sustainability Group Award. The Fairfax County Park Authority's South Run RECenter's Volunteer Landscape Team volunteers are credited with beautifying the entrance and grounds at the 195-acre South Run Park by weeding, edging, mulching and planting 25 garden plots, border areas along the entrance roads and two pollinator gardens. In 2020 alone, team members contributed 718 hours of work and supervised 27 volunteers who contributed an additional 426 hours of landscaping duties.

2020 Awards

2020 American Public Works Association, Mid-Atlantic Chapter. The chapter recognized Fairfax County with awards in eight major categories including Project of the Year Awards to the Backlick Run Gravity Sewer Project, the Tertiary Filters Rehabilitation Project, the Reston Community Center Aquatics Facility Project, the Scotts Run Trail Project and the Innovation Center Parking Garage Project. Three Honorable Mention Awards were won by the rehabilitation of three equalization basins, the Vehicle Services West Ox Facility and the McLean Metro Gravity Sewer Capacity Improvements Project.



FAIRFAX COUNTY OPERATION STREAM SHIELD

Enhancing Communities While Building Lives
Department of Public Works and Environmental Services

2020 Chesapeake Stormwater Network (CSN), Best BMP in the Bay Award (BUBBA), Innovative Stormwater Permit Implementation Category. The MS4 (Municipal Separate Storm Sewer System) team won a second place 2021 BUBBA Award in the Innovative Stormwater Permit Implementation category for the Operation Stream Shield (OSS) program. OSS assists those experiencing homelessness by providing part-time temporary work to guests of the Eleanor U. Kennedy Community Shelter, Bailey's Crossroads Community Shelter, and The Lamb Center. They earn money by cleaning local streams and removing litter. The program is a partnership between the DPWES and the Office to Prevent and End Homelessness (OPEH).

National Association of Clean Water Agencies (NACWA), 2020 Utility of the Future. The Fairfax County Wastewater Management Program won NACWA's 2020 annual Utility of the Future award. The recognition is based on the adoption of the seven Utility of the Future principles and the county's commitment to protect public health by providing sustainable, efficient services. The Utility of the Future program recognizes facilities that implement advancements in technology and cutting-edge practices that focus on resource recovery, efficiency and sustainability; and improvements that look beyond the traditional operational models based on the Clean Water Act of 1972; and consider innovations that preserve best practices, while incorporating sustainable principles, which ultimately benefit communities and improve financial stability.

2020 National Association of Counties (NACo), Children and Youth Category. The DPWES Watershed Education and Outreach group won a NACo Achievement Award in Children and Youth Category for its video-learning materials on stream ecology and water quality. The videos connect students with freshwater ecologists who demonstrate how they monitor biodiversity in streams to determine stream ecosystem health. NACo's Achievement Award is a non-competitive awards program that seeks to recognize innovative county government programs.

2020 Water Environment Federation (WEF), Silver Levels for MS4 Program. Fairfax County's Municipal Separate Storm Sewer System (MS4) program was awarded a Silver Level in Program Management and in Innovation by the not-



for-profit Water Environment Federation in their National Municipal Stormwater and Green Infrastructure Awards Program.

2019 Awards

2019 Institute for Sustainable Infrastructure, Envision Gold Award. A project to replace the chemical disinfection system with an ultraviolet light system at Fairfax County's Noman M. Cole, Jr. Pollution Control Plant, in Lorton, Va., earned an Envision Gold award from the Institute for Sustainable Infrastructure. Significant benefits of the project include the reduction in greenhouse gas (GHG) emissions from fewer truck deliveries of liquid chemicals, less local traffic congestion, and reduced exposure of county staff to safety concerns. The facility's hydraulic grade line was modified to allow for the complete elimination of a pump station, resulting in both operational energy savings and reduced GHG emissions. The plant treats more than 40 percent of the county's wastewater.

2019 Chesapeake Stormwater Network (CSN), Best BMP in the Bay Award (BUBBA), Habitat Creation Category. The Silas Burke Park Reforestation Planting project, undertaken by DPWES in partnership with the Fairfax County Park Authority (FCPA), was awarded first place in the Best Habitat Creation category of the Chesapeake Stormwater Network's "Best Urban BMP in the Bay Award" (BUBBA) contest. A BUBBA award recognizes exemplary urban best management practices (BMPs) in the Chesapeake Bay watershed, while the Best Habitat category recognizes restoration projects that create or restore a high-quality blend of wetland or upland wildlife habitats. The Silas Burke Reforestation project converted over 10 acres of county parkland from turf grass and invasive species to forest, increasing the diversity of the local native plant community.

2019 National Recreation and Park Association (NRPA), Gold Medal Winner for Excellence in Parks and Recreation, Class I Category. Since 1965, the American Academy for Park and Recreation Administration in partnership with NRPA, has honored communities that demonstrate excellence in long-range planning, resource management and innovative approaches to delivering superb park and recreation services with fiscally sound business practices. This is the seventh time FCPA has been a NRPA finalist in this category. The agency has received the Gold Medal four times, in 1983, 2002, 2010 and 2019.



2019 SolSmart Program, Gold Designation. SolSmart is a national designation program funded by the U.S. Department of Energy's Solar Technologies Office that recognizes cities, counties, and regional organizations that foster the development of mature local solar markets. In August 2019, Fairfax County was designated a "SolSmart Gold" community in recognition of its long-standing efforts to encourage solar energy growth and remove obstacles to solar development. The county also received special recognition in the Inspections category.

2019 National Association of Counties (NACo), Civic Education and Public Information Achievement Award. The DPWES Watershed Education and Outreach Group won a NACo Achievement Award in Civic Education and Public Information for its Stream Critter Cube Lab. The lab connects students with freshwater ecologists who demonstrate how they monitor biodiversity in streams to determine stream ecosystem health. NACo's Achievement Award is a non-competitive awards program that seeks to recognize innovative county government programs.

2018 Awards

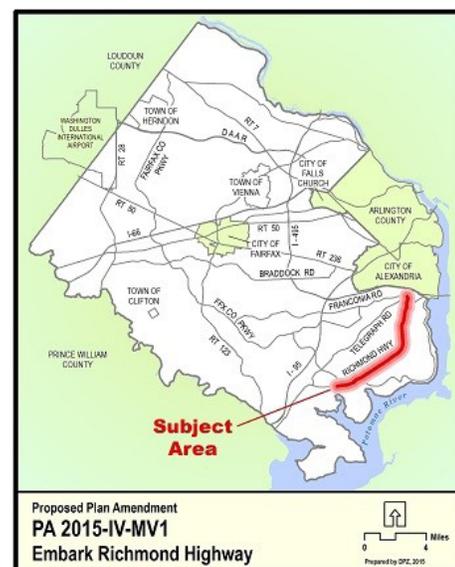
2018 National Association of Clean Water Agencies (NACWA), Platinum Peak Performance Award. Fairfax County's Noman M. Cole, Jr. Pollution Control Plant received NACWA's Platinum Peak Performance Award for 100 percent permit compliance for the plant's National Pollutant Discharge Elimination System (NPDES) permit. Eligibility requirements include conducting more than 6,700 tests to verify compliance with the Clean Water Act. The 2018 award marked the 20th consecutive year the Noman M. Cole, Jr. Pollution Control Plant earned the Platinum Peak Performance Award.

2018 American Planning Association (APA), Virginia Chapter, Commonwealth Plan of the Year Award. The Virginia Chapter of the American Planning Association awarded Fairfax County its Commonwealth Plan of the Year award for the county's "Embark Richmond Highway" planning effort. "Embark Richmond Highway" will transform the 7.5 mile Richmond Highway Corridor into a multi-modal destination with continuous walking and bike paths in addition to a bus rapid transit system. Fairfax County's plan was chosen for its outstanding planning processes, vision, implementation strategies and innovative approaches.

2018 Water Environment Federation (WEF), Gold and Silver Levels for MS4 Program. Fairfax County's Municipal Separate Storm Sewer System (MS4) program was awarded both a Gold Level in Program Management and a Silver Level in Innovation by the not-for-profit Water Environment Federation in their National Municipal Stormwater and Green Infrastructure Awards Program.

2017 Awards

2017 Governor's Environmental Excellence Awards, Gold Medal. Fairfax County's Huntley Meadows Park Wetland Restoration project was awarded a Gold Medal in the Environment Category of the Governor's Environmental Excellence Awards, which are sponsored by the Virginia Department of Environmental Quality and Virginia Department of Conservation and Recreation. The restoration project included FCPA's use of innovative technology to aid in the rehabilitation of rare species and the development of stewardship education in the community.



2018 Commonwealth Plan of the Year Award from the Virginia Chapter of the American Planning Association for Embark Richmond Highway.

2017 National Association of County Park and Recreation Officials (NACPRO), Environmental/Conservation Award. The association honored FCPA for its Invasive Management Area program, which trains volunteers to lead other volunteers in removing non-native, invasive plants from parkland and planting native plants.

2016 Awards

2016 Public Technology Institute (PTI), Sustainability Solutions Winner Award. FCPA received a PTI Sustainability Solutions award for its Smart Irrigation Systems project. This award-winning project replaced existing irrigation controllers with a web-based smart irrigation control system that uses local weather data to automatically adjust watering times. The web-based system allows FCPA to shut off the water from anywhere at any time.

2016 National Association of Clean Water Agencies (NACWA), Utility of the Future Today, Recognition. The Utility of the Future Today recognition program honors water resource recovery facilities for community engagement, watershed stewardship, and recovery of resources such as water, energy, and nutrients. In 2016, Fairfax County's Wastewater Management Program was named a Utility of the Future Today along with 61 other utilities from the U.S., Canada, and Denmark. The recognition program is a partnership of water sector organizations including the National Association of Clean Water Agencies, the Water Environment Federation, the Water Research Foundation and the WaterReuse Association, with input from the U.S. Environmental Protection Agency (EPA).

2015 Awards

2015 PTI, Sustainability Solutions Significant Achievement Award. FCPA received a Sustainability Solutions award from the Public Technology Institute for its Athletic Courts Lighting Control project. In this project, FCPA installed push-button strobe-control units for all tennis, basketball and volleyball court lighting systems, reducing both electricity use and required maintenance. Astronomical time clocks ensure that the push-button controls are active only during the hours specified by FCPA.

2015 NACo, Children and Youth Best in Category Achievement. The National Association of Counties honored the Stream Crime Investigation laboratory that teaches high school students about stormwater, watersheds and water quality monitoring. The lab exercise replicates how stormwater professionals identify and track the sources of pollutants in a storm drainage network.

2014 Awards

2014 CSN, BUBBA, Habitat Creation Category. The county's Brookfield Park wet pond rehabilitation project won second place in the Best Habitat Creation category in this award contest sponsored by the Chesapeake Stormwater



Network. Several divisions of DPWES and FCPA worked together to restore the dam in the Brookfield Park and plant native vegetation for habitat.

2014 NACo, Best in Environmental Protection and Energy Achievement

Award. DPWES's Stormwater Planning Division received this 2014 award for developing "A Field Guide to Fairfax County's Plants and Wildlife." DPWES and Fairfax County Public Schools collaborated in developing this field guide as part of the fifth-grade science curriculum to highlight the links between ecology and our watersheds.

2014 NACWA, Platinum Peak Performance Award. The NACWA Platinum Awards recognize outstanding compliance with NPDES permit limits for five or more consecutive years. At the time of the 2014 award, Fairfax County's Noman M. Cole Jr. Pollution Control Plant had achieved 100 percent NPDES compliance for 16 consecutive years – one of only nine municipal water treatment plants across the nation to do so.

2013 Awards

2013 NACo, Achievement Award in Environmental Protection and Energy.

This NACo award honored the county's Government Center stream restoration project, an innovative water quality project that included a stream restoration and pond retrofits on county property.

2013 Coalition for Smarter Growth, The Sanders-Henn Community Hero

Award. The non-profit Coalition for Smarter Growth honored Fairfax county staff in the areas of planning, revitalization, transportation, housing, parks and public services for their on-going efforts to make Tysons a green, walkable urban center.

2013 National Association of Government Communicators (NAGC), Best in Show Award.

The association's Board of Directors awarded FCPA Best in Show for its invasive plant management program, "Take Back the Forest." This program, which involves a partnership between county government and schools, brings more than 500 volunteers into parks over a 30-day period to remove non-native invasive plants and replace them with native plants.

2012 Awards

2012 NACo, Achievement Award in Public Education. Fairfax County was recognized for its "Stormy the Raindrop" public education campaign. The campaign, which was developed by the Stormwater Division of DPWES, centers on a child-friendly character named Stormy the Raindrop.

2012 NACWA, Silver Excellence in Management Award. The NACWA award recognized the Fairfax County Wastewater Management Program for its significant achievements in the utility management arena. The Excellence in Management Award honors agencies that have implemented and sustained,

for a continuous three-year period, successful programs that address the range of management challenges faced by public clean water utilities in today's competitive environment.

2011 Awards

2011 APA, Daniel Burnham Award. This award, which recognizes advancement of the science and art of planning, is granted to only one urban plan in the nation each year. The American Planning Association honored the county's Comprehensive Plan for the Tysons Corner Urban Center. Award-winning plan elements include a tiered approach to density, incentives to reserve 20 percent of new housing units for moderate-income households, and innovative stormwater management facilities designed to retain at least the first inch of rainfall on site.

2011 Governor's Environmental Excellence, Bronze Award. The Governor's Environmental Excellence Awards recognize the significant contributions of environmental and conservation leaders in the areas of sustainability and land conservation. Fairfax County received a Bronze award for its stormwater outreach.

2010 and Prior Awards

- 2010 National Recreation and Park Association Gold Medal Award, Class 1 Category, to FCPA for demonstrating excellence in long-range planning and resource management.
- 2010 Virginia Mosquito Control Association, Outstanding Service Award, to the Health Department for its Disease Carrying Insects Program.
- 2010 Governor's Environmental Excellence, Bronze Award, to DPWES's Wastewater Management Program for its Community Outreach Program.
- 2009 NACo Achievement Award for the Herrity Building Garage Vegetative Roof.
- 2008 MarCom Platinum Winner and Communicator Award of Excellence, presented to FCPA for its Non-Native Invasive Plant Identification and Control Handbook.
- 2008 PTI Solutions Award in the Sustainability Category for the county's plug-in electric hybrid vehicle fleet trial program.
- 2007 U.S. EPA Green Power Partner.
- 2007 EPA EnergyStar Partner.
- 2007 Solid Waste Association of North America Bronze Excellence Award in the Integrated Solid Waste Management Program category.
- 2006 Businesses for the Bay Environmental Excellence Award for Outstanding Achievement for Nutrient Reduction by a Local Government.



- 2006 NACo Achievement Award for Environmental Excellence, recognizing the county's 2005-2006 Environmental Improvement Program.
- 2006 EPA Landfill Methane Outreach Program Community Partner of the Year.
- 2005 Businesses for the Bay Environmental Excellence Award for Local Government for Outstanding Nutrient Reduction.
- 2005 NACo Achievement Award in the Environmental Protection and Energy Category for Fairfax County's air quality protection strategy.
- 2004 Chesapeake Bay Program, Gold Chesapeake Bay Partner Community.
- 2004 NACo Achievement Award for Watershed Management Planning.
- 2004 NACWA Excellence in Management Award.
- 2003 EPA Clean Water Partner for the county's leadership role in the protection of the Chesapeake Bay.
- 2003 NACo Achievement Award for Keep It Green E-Waste Program.



APPENDIX



APPENDIX

Featured in this Section

Appendix I: How to Report Environmental Concerns	137
Appendix II: Acronyms	141

TTY 711 for all phone numbers	
Type of Incident	Phone Number
<p>RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT</p> <p>To report the dumping of any materials into a stream, manhole, storm sewer or onto the ground, call 9-1-1. When calling, be prepared to provide specific information about the location of the incident. County inspectors will investigate complaints within the county, Cities of Fairfax and Falls Church, and the Towns of Clifton, Herndon and Vienna.</p>	911
<p>ILLEGAL DUMPING</p> <p>While different county and/or state agencies may ultimately have authority over dump sites, depending on circumstances, the Department of Code Compliance (DCC) is an intake center for complaints. Call or visit DCC at www.fairfaxcounty.gov/code.</p>	703-324-1300
<p>LAND CLEARING; TREE REMOVAL; DUMPING OF FILL</p> <p>To report the suspected illegal removal of trees, clearing of land, digging or dumping of fill dirt, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	703-324-1300
<p>SOIL EROSION AND DRAINAGE</p> <p>To report soil erosion and drainage problems from private properties or construction sites, call the hotline of the Site Development and Inspection Division of Land Development Services or visit www.fairfaxcounty.gov/landdevelopment/site-development to submit a complaint online.</p>	703-324-7470
<p>STORMWATER DRAINAGE AND SEWER SYSTEM</p> <p>For flooding caused by the storm drainage or sewer system, call the Wastewater Collection Division of the Department of Public Works and Environmental Services.</p>	703-323-1211
<p>TRASH OR DEBRIS ON CONSTRUCTION SITES</p> <p>Call the Hotline of the Site Development and Inspection Division of Land Development Services or visit www.fairfaxcounty.gov/landdevelopment/site-development to submit a complaint online.</p>	703-324-7470



Type of Incident	Phone Number
<p>CONSTRUCTION NOISE</p> <p>To report construction noise outside between 9 p.m. and 7 a.m. on Sunday through Thursday, or between 9 p.m. and 9 a.m. on Fridays, Saturdays and the day before federal holidays, contact the following:</p> <ul style="list-style-type: none"> • If the construction activity is occurring at the time of the complaint, call the Fairfax County Police non-emergency number. • If the construction activity is ongoing or recurring, call the Department of Code Compliance, or visit www.fairfaxcounty.gov/code. 	<p>703-691-2131</p> <p>703-324-1300</p>
<p>NOISE IN A RESIDENTIAL AREA</p> <p>To make a complaint about noise from animals, amplified sound, vehicles or people, contact the following:</p> <ul style="list-style-type: none"> • If the noise is occurring during non-business hours, call the Fairfax County Police non-emergency number. • If the noise is ongoing or recurring, call the Department of Code Compliance, or visit www.fairfaxcounty.gov/code. 	<p>703-691-2131</p> <p>703-324-1300</p>
<p>TRASH AND WASTE COLLECTION</p> <p>Call the Department of Public Works and Environmental Services. If possible, provide descriptive information about the truck, such as name of company, color, truck number and license plate number.</p>	703-324-5230
<p>OUTDOOR LIGHTING CONCERNS</p> <p>To report problems with glare, overlighting or other issues, call the Department of Code Compliance, or visit www.fairfaxcounty.gov/planning-development/zoning-ordinance/outdoor-lighting.</p>	703-324-1300
<p>SIGNS ON ROADS AND MEDIANS</p> <p>If a sign on a road or median poses a safety hazard, call the Virginia Department of Transportation. Fairfax County performs monthly collections of illegal roadway signs on certain designated roads. More information is at www.fairfaxcounty.gov/code/signs-information-complaints.</p>	1-800-367-7623
<p>SIGNS ON PRIVATE PROPERTY</p> <p>There are restrictions for signs on private property. To report a complaint, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code/signs-information-complaints.</p>	703-324-1300

Type of Incident	Phone Number
<p>POORLY MAINTAINED HOMES OR OTHER BLIGHTED PROPERTIES</p> <p>To report problems including broken windows and gutters, junk or debris in yards and tall, uncut grass, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code/blight.</p>	703-324-1300
<p>ABANDONED VEHICLES (FOUR OR FEWER)</p> <p>Contact the Fairfax County Police Department's Traffic Division Impound Section, or e-mail: FCPDJunkVehicle@fairfaxcounty.gov.</p>	703-280-0716
<p>ABANDONED VEHICLES (FIVE OR MORE)</p> <p>Contact the Department of Code Compliance, or visit: www.fairfaxcounty.gov/code.</p>	703-324-1300
<p>WILDLIFE/ANIMAL CONTROL ISSUES</p> <p>Contact the Police Department's non-emergency dispatch number.</p>	703-691-2131
<p>AIR POLLUTANTS</p> <p>Air pollutants are emitted by both stationary and mobile sources. To report an incident, call the Virginia Department of Environmental Quality Northern Regional Office or complete the form at https://portal.deq.virginia.gov/prep/Report/Create.</p>	<p>703-583-3800</p> <p>After hours and in an emergency, call 1-800-468-8892</p>
<p>NO RECYCLING IN SCHOOLS</p> <p>Fairfax County School Board Policy 8541 states that all Fairfax County Public School (FCPS) facilities must recycle to the maximum extent possible, with an initiative focused on paper, cardboard, metal, and plastic, and another on fluorescent light tubes and bulbs. To report schools that are not recycling in accordance with this policy, contact the FCPS Department of Facilities and Transportation Services. An FCPS recycling site is available at: www.fcps.edu/facilitiesmanagement/recycling.</p>	<p>571-423-2350</p> <p>After hours: 571-423-2000</p>
<p>BUSINESS OR RESIDENTIAL RECYCLING</p> <p>To report a suspected violation of recycling requirements, call the Department of Public Works and Environmental Services, Solid Waste Division or submit the Solid Waste Feedback Form at www.fairfaxcounty.gov/publicworks/recycling-trash/solid-waste-feedback-form.</p>	703-324-5230

Type of Incident	Phone Number
<p>HEALTH HAZARDS</p> <p>For information and guidance on a suspected environmental hazard that may pose a public health risk, call the Health Department's Division of Environmental Health. These hazards include unburied dead animals, rat infestations, and mosquito breeding sites.</p>	<p>703-246-2201</p>
<p>MEDICAL WASTE</p> <p>Improper storage or disposal of medical waste should be reported to the Solid Waste Compliance Coordinator of the Virginia Department of Environmental Quality.</p>	<p>703-583-3800</p> <p>After hours or in an emergency, call 1-800-468-8892</p>
<p>COVID-19 CONCERNS</p> <p>For the latest information on testing, vaccinations, quarantine requirements, and/or to file a complaint, call the COVID hotline or visit www.fairfaxcounty.gov/covid19/.</p>	<p>703-267-3511</p>

The following acronyms are used in this document:

ADC	Adult Detention Center
APA	American Planning Association
AQPAC	Air Quality Public Advisory Committee
BACs	Boards, Authorities and Commissions
BLM	Bureau of Land Management
BMP	Best Management Practice
Board	Fairfax County Board of Supervisors
BUBBA	Best Urban BMP in the Bay Award
BMS	Building Energy Management System
CAAA	Clean Air Act Amendments
CDA	Community Development Authority
CESQG	Conditionally Exempt Small Quantity Generator
CFL	Compact Fluorescent Light
CO	Carbon Monoxide
CO₂e	Carbon Dioxide Equivalent
COG	Council of Governments (see also MWCOG)
CRA	Commercial Revitalization Area
CRD	Commercial Revitalization District
CWA	Clean Water Act
DCIP	Disease-Carrying Insects Program
DEF	Diesel Exhaust Fluid
DEH	Division of Environmental Health
DOT	Department of Transportation
DPD	Department of Planning and Development
DPMM	Department of Procurement and Material Management
DPWES	Department of Public Works and Environmental Services
DVS	Department of Vehicle Services
E2	Environmental Enterprise
E4	Extraordinary Environmental Enterprise
EAF	Energy Action Fairfax
ECC	Environmental Coordinating Committee
EIP	Environmental Improvement Program

EPA	Environmental Protection Agency
EPEAT	Electronic Product Environmental Assessment Tool
EQAC	Environmental Quality Advisory Council
EQC	Environmental Quality Corridor
ERRF	Energy Resource Recovery Facility
FCCS	Fairfax County Commuter Services
FCDOT	Fairfax County Department of Transportation
FCPA	Fairfax County Park Authority
FCSI	Fairfax County Sustainability Initiatives
FCWA	Fairfax County Water Authority
FEEE	Fairfax Employees for Environmental Excellence
FEMA	Federal Emergency Management Agency
FMD	Facilities Management Department
FOG	Fats, Oil and Grease
FY	Fiscal Year
GHG	Greenhouse Gas
GIS	Geographic Information System
HHW	Household Hazardous Waste
HIA	Health Impact Assessment
HiAP	Health in All Policies
HID	High Intensity Discharge
HOT	High Occupancy Toll Lane
HOV	High Occupancy Vehicle
HVAC	Heating, Ventilation and Air Conditioning
IAQC	Interstate Air Quality Council
IMA	Invasive Management Area
IPM	Integrated Pest Management
IT	Information Technology
kBtu	One Thousand British Thermal Units
kWh	Kilowatt Hour
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LFG	Landfill Gas

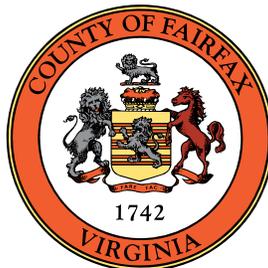
LFGTE	Landfill Gas-to-Energy
MS4	Municipal Separate Storm Sewer Systems
MSW	Municipal Solid Waste
MT CO₂e	Metric Tons Carbon Dioxide Equivalent
MWAQC	Metropolitan Washington Air Quality Committee
MWCOG	Metropolitan Washington Council of Governments (see also COG)
NAAQS	National Ambient Air Quality Standards
NACo	National Association of Counties
NACPRO	National Association of County Parks and Recreation Officials
NACWA	National Association of Clean Water Agencies
NAGC	National Association of Government Communicators
NOVA Parks	Northern Virginia Regional Park Authority (see also NVRPA)
NOx	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NRPA	National Recreation and Park Association
NVCT	Northern Virginia Conservation Trust
NVRC	Northern Virginia Regional Commission
NVRPA	Northern Virginia Regional Park Authority
NVSWCD	Northern Virginia Soil and Water Conservation District
OPEH	Office to Prevent and End Homelessness
OWMP	Occoquan Watershed Monitoring Program
PC	Personal Computer
PM	Particulate Matter
PM2.5	Fine Particulate Matter
Ppb	Parts per Billion
PSC	Project Selection Committee
PSHQ	Public Safety Headquarters
PTI	Public Technology Institute
PVT	Park Volunteer Team
RA	Reston Association
RMA	Resource Management Area
RPA	Resource Protection Area
SaMS	Salt Management Strategy

SCR	Selective Catalytic Reduction
SIP	State Implementation Plan
Smog	Ground-Level Ozone
SOV	Single-Occupant Vehicle
SO ₂	Sulfur Dioxide
SPP	Sustainable Procurement Policy
SWCB	State Water Control Board
SWMP	Solid Waste Management Program
TDM	Transportation Demand Management
TIF	Tax Increment Financing
TMDL	Total Maximum Daily Load
TOD	Transit-Oriented Mixed-Use Development
TSA	Transit Station Areas
TSM	Transportation System Management
Tysons	Tysons Urban Center
UFMD	Urban Forest Management Division
UOSA	Upper Occoquan Service Authority
VAC	Virginia Administrative Code
VA-CHPS	Virginia-Collaborative for High Performance Schools
VDEQ	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VEEP	Virginia Environmental Excellence Program
VOC	Volatile Organic Compound
VRE	Virginia Railway Express
WEF	Water Environment Federation
WSP	Water Supply Plan
WTE	Waste-To-Energy
WWMP	Wastewater Management Program





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